Woodward-Clyde Consultants

INTERIM REPORT ON PHASE II OF THE SUBSURFACE INVESTIGATION AT TANKS 19T AND 20T AT THE C6 FACILITY

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TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	OBJECTIVE	1
3.0	DESCRIPTION OF THE FIELD PROGRAM	2
4.0	RESULTS	4 5 5 5
5.0	CONCLUSIONS	8
6.0	RECOMMENDATIONS	9
	LIST OF FIGURES	
2	C6 Facility Location Map	1
	LIST OF TABLES	
2 7	Ground Water Analytical Results	7

LIST OF APPENDICES

- A Field Procedures and Methodology
- B Boring Logs
 C Water and Soil Analytical Results with Chainof-Custody Forms

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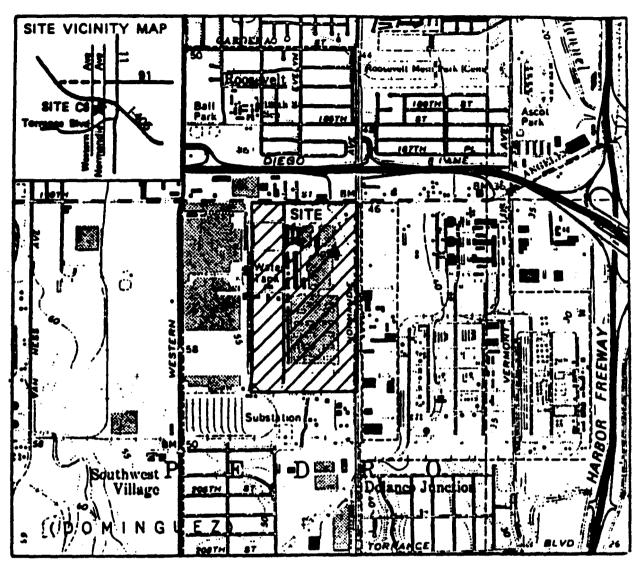
1.0 INTRODUCTION

The purpose of this report is to present the results of the Phase II subsurface investigation. This investigation was performed to evaluate the source of elevated concentrations of organic compounds in the soil and ground water near tanks 19T and 20T at Douglas Aircraft Company's C6 facility in Los Angeles, California. The facility location is shown on Figure 1.

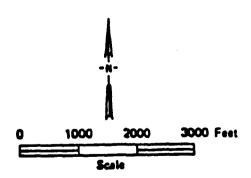
The results of Phase I of the investigation indicated the presence of petroleum hydrocarbons in the soil to a depth of 50 feet in the vicinity of tanks 19T and 20T. In addition, 1,1-dichloroethene, 1,1,1-trichloroethane, trichloroethene, and benzene had been detected in water samples collected from observation well WCC-1, which was installed at a location thought to be downgradient of the tanks. The locations of borings and wells installed during the Phase I work are shown on Figure 2.

2.0 OBJECTIVE

The objective of this phase of the investigation was to evaluate the source of organic compounds in the soil and ground water near tanks 19T and 20T.





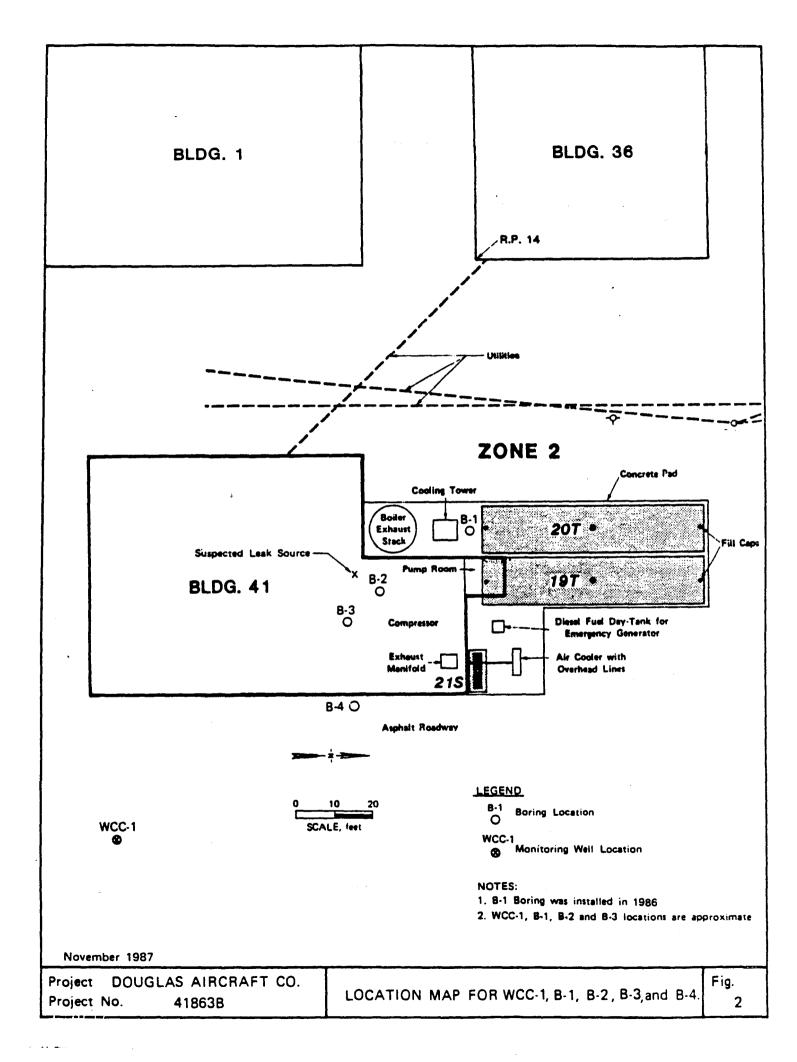


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Project No. 41863A

C6 FACILITY LOCATION MAP

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3.0 DESCRIPTION OF THE FIELD PROGRAM

Phase II of the investigation was performed in the following manner. Three additional observation wells (WCC-2, WCC-3 and WCC-4) were installed at the locations shown on Figure 3. Details on the field program used during the installation of the wells are presented in Appendix A.

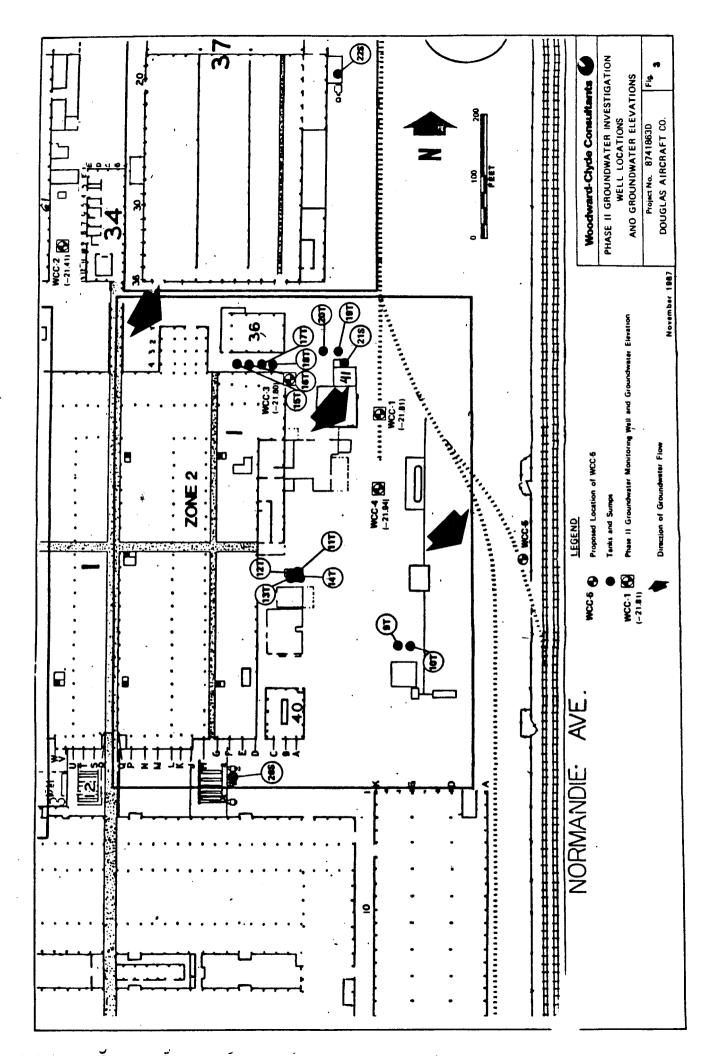
Well WCC-1 is located approximately 40 feet due east of Building 41, and was installed in March 1987. Well WCC-1 is downgradient with respect to the location of tank clusters 19T, 20T, and 15T to 18T (see Figure 3).

Well WCC-2, is situated between buildings 61 and 34. This well is considered to be the upgradient ground water observation well relative to the two tank clusters, and is approximately 400 feet northwest of tank cluster 15T to 18T.

Well WCC-3 is located at the northeast corner of Building 1, between the diesel tank cluster 19T, 20T, and the solvent tank cluster 15T to 18T. This well is also situated downgradient of solvent tanks 15T and 18T.

Well WCC-4 is approximately 100 feet southeast of Building 41, and is downgradient of tank clusters 19T, 20T, and 15T to 18T.

Boring B-4 was installed on May 26, 1987 by A & R Drilling Company (see Figure 2). This boring was installed to allow further evaluation of the vertical extent of petroleum hydrocarbons in the subsurface near tanks 19T and 20T. Borings B-1, B-2, and B-3 were installed during an earlier



evaluate whether organic compounds are present in the ground water at the site perimeter. A discussion on the optimum location for Well WCC-5 is presented in Section 6.0.

Ground surface elevations of observation wells WCC-1, -2, -3, and -4 were surveyed on 3 November 1987 by Rattray and Associates, Inc. of Santa Ana, California. The survey provided the ground water elevation data required to evaluate the direction of the ground water gradient.

4.0 RESULTS

4.1 Ground Water Elevations

Ground water elevation data collected on 6 November 1987 indicated that in the area defined by the four wells, the elevation of ground water from Mean Sea Level (MSL) varies from -21.41 to -21.94 feet. These elevations indicate that the water table is over 21 feet below MSL. The water levels from the deeper aquifers, are also below MSL. Water level information from 1983 indicates that the water levels in these deeper aquifers are at approximately -60 feet MSL (Los Angeles Flood Control District).

The low ground water levels found in the deep aquifers can be attributed to the reduced natural ground water recharge caused by urbanization of the Los Angeles Basin and the heavy use of ground water. Channelizing the Los Angeles and San Gabriel rivers also has significantly reduced recharge to the ground water system. The reduced recharge and heavy ground water extraction produce a ground water overdraft and a subsequent lowering of the water table. The ground water

phase of this investigation. Analytical data obtained from soil samples from these borings indicated that petroleum hydrocarbons were present to a depth of approximately 50 feet. The purpose of Boring B-4 was to evaluate how far below this 50-foot depth the hydrocarbons had penetrated. Boring B-4 was installed approximately 30 feet away from the suspected source of the release, and was slant drilled at an angle of 26 degrees from vertical, outside of the building. This boring had to be installed outside the building, because space restrictions prevented use of a large drill rig inside the building. The boring was terminated at a vertical depth of 54 feet.

Well logs from observation wells WCC-1, -2, -3, and -4 and Boring Logs for B-1, -2, -3, and -4 are presented in Appendix B.

On 30 October 1987, wells WCC-2, -3, and -4 were developed by Beylick Drilling Company of La Habra, California. The observation wells were developed by a surge block and sand bailer method, and pumped with a submersible pump until the extracted water was free of visible suspended material. Water samples were collected for chemical analysis for volatile organics (EPA 8240) and petroleum hydrocarbons (EPA 8015). The well development and water sampling methods used are discussed in Appendix A.

An additional observation well, WCC-5 will be located and installed within two weeks based on the estimated direction of the ground water gradient provided in this report. Well WCC-5 will be located along the eastern property line to

levels in the semi-perched aquifer beneath the facility may be influenced by the same factors as the deeper aquifers in the area.

4.2 Ground Water Gradient

The ground water gradient calculated from ground water elevations taken 6 November 1987 indicates a gradient sloping from the northwest to the southeast. Direction of ground water flow is illustrated on Figure 3. The ground water gradient was calculated through the use of gradient vectors between wells WCC-1, -2, -3, and -4. The ground water gradient illustrated in Figure 3 is based on data from wells WCC-1, -2, -3, and -4, and may not reflect ground water gradients at other areas at the C6 facility.

4.3 Well WCC-5 Location

The southeast gradient of ground water (discussed in Section 4.2) allows observation Well WCC-5 to be located along the property line, downgradient of the tank clusters. The proposed location of WCC-5 is shown on Figure 3. This observation well will be installed, developed, and sampled in the same manner as wells WCC-1, -2, -3, and -4. Water analysis results from Well WCC-5 will be used to assess whether organic compounds are present in the ground water at the site boundary.

4.4 Analytical Results of Wells WCC-1, -2, -3, and -4

Water samples were collected from observation wells WCC-1, WCC-2, -3, and -4 on 15 April and 2 November 1987. The samples were analyzed for volatile organic compounds (EPA 8240) and petroleum hydrocarbons (EPA 8015) by West Coast

Analytical Service, Inc. in Santa Fe Springs, California. Analytical results for the ground water samples are summarized in Table 1.

These analytical results show that the highest concentration of organic compounds was found in the sample collected from Well WCC-3, immediately downgradient of the tank cluster 15T to 18T. The concentration decreases as the downgradient distance from this area increases. The lower readings obtained from WCC-4 as compared to WCC-1 suggest that WCC-4 is closer to the edge of the plume than WCC-1. Well WCC-2, the upgradient well, has very low concentrations of 1,1-DCE, 1,1,1-TCA and TCE. Petroleum hydrocarbons were not detected in the water samples when analyzed by Method 8015. These results indicate that the source of the organic compounds in the ground water was not the release from tanks 19T, 20T.

Soil samples were collected at depths of approximately 45, 55, 65, 75, and 80 feet from all three well locations for Organic Vapor Analyzer (OVA) field headspace measurements and possible laboratory analysis. Refer to Appendix A for sampling methodology. Elevated OVA headspace readings and chemical odors were noted during the installation of Well WCC-3. OVA measurements were recorded on the Boring Logs presented in Appendix B. The presence of odors and elevated OVA readings were not observed at wells WCC-1, WCC-2, and The 55 and 65 foot depth soil samples from Well WCC-3 were analyzed for the presence of volatile organics (EPA 8240) and petroleum hydrocarbons (EPA 8015). trations of 1,1-dichloroethane (methylene chloride), 1,1-dichloroethene (1,1-DCE), 4-methyl-2-pentanone (MIBK), 1,1,1-trichloroethane (1,1,1-TCA), and toluene were found in

TABLE 1
GROUND WATER ANALYTICAL RESULTS
Concentrations (ug/l)

	WCC-1	ucc-1* 4/13/87	ucc-1 11/12/87	UCC-2 11/2/87	WCC-2 11/12/87	UCC-3 11/2/87	UCC-3 11/12/87	WCC-4 11/2/87	UCC-4 11/12/87
SOMOTON	2 800	3.700/2.500	3,000	2	2	38,000	88,000	360	1,200
,1-Dichloroethene (1,1-Due)	;	/	ສ	:	:	•	1,000	:	:
,1-Dichloroethane (1,1-DCA)		260/120	091	w	:	110,000	24,000	71	æ
,1,1-Trichloroethane (1,1,1-Tux)	009.7	5.500/3,600	5,200	2	4	10,000	11,000	200	069
richloroethene (ICE)	;	/	:	;	:	24,000	70,000	:	:
-Methyl-2-pentanone (MIBK)	, ,		ĸ	:	;	:	1,000	7	;
trans-1,2-dichloroethene (trans-1,2-DCE)	: :	·	: £	:	:	:	:	7	•
chloroform	:	/-	;	•	-	80,000	140,000	:	:
Toluene	¥	110/	9	:	:	:	:	:	:
Benzene Detection level (ug/l)	8 8	20/50	.00	-	-	1,000	1,000	-	\$

Duplicate sample also analyzed
 Not detected

BOE-C6-0014291

the soil samples ranging from 8 to 590 ug/kg (ppb). Petroleum hydrocarbons were not found in the soil samples analyzed.

As a part of the underground tank management program at the C6 facility, soil borings were installed next to tanks and sumps, to identify past or current leakage of chemicals from these storage units. Borings were installed on 24 August 1987 adjacent to tanks 15T and 17T. Boring Logs for tanks 15T and 17T are presented in Appendix B. Analytical results obtained from soil samples collected from these borings are summarized in Table 2.

The results indicate the presence of organic compounds in the soil next to the tanks. Soil samples from the boring next to Tank 15T contained a variety of compounds, including some of those found in the ground water (1,1,1-TCA, MIBK, TCE, and toluene). Samples from the boring next to Tank 17T contained only MIBK from the variety of compounds found in the ground water.

Laboratory analytical results for water and soil samples, and copies of the chain-of-custody forms are presented in Appendix C.

4.5 Depth of Penetration of Petroleum Hydrocarbons

Boring B-4 was installed on May 26, 1987, and was terminated at a vertical depth of approximately 54 feet (slant depth of 60.5 feet, see Figure 2). Analysis of samples collected from the boring showed that the concentration of petroleum hydrocarbons decreased from 16,000 mg/kg to below detection between a depth of 50 and 54 feet. Table 3 summarizes the

TABLE 2

ANALYTICAL RESULTS FROM SOIL BORINGS 15TB AND 17TB

Concentration (mg/kg)

Compound	15T (20 feet)	17T (30 feet)
2-Butanone (MEK)	1,800	810
1,1,1-TCA	38	
TCE	94	
Toluene	6,300	
Ethylbenzene	180	
Total xylenes	1,300	
4-methyl-2-pentanone (MIBK)		840

⁻⁻ Not detected

TABLE 3

ANALYTICAL RESULTS FROM BORING B-4

Sample Depth (ft)	Petroleum Hydrocarbons (mg/kg) ppm
13	ND
18	15,000
22	44,000
27	8,200
31	28,000
36	6,000
40	1,500
44	, ***
49	16,000
54	ND
Detection Limit	10

⁻⁻ Not analyzed

analytical data. Data from this boring indicated that the petroleum hydrocarbons have penetrated to a depth of approximately 50 feet.

5.0 CONCLUSIONS

Observation wells WCC-2, -3, and -4 were installed to depths of approximately 90 to 91 feet at the C6 Torrance facility. Soil borings B1, B2, B3, and B4 were installed to depths of 31 to 54 feet, adjacent to tanks 19T and 20T. Data obtained from these wells and borings indicate the following:

- 1. The ground water gradient in the area under investigation slopes from the northwest to southeast (see Figure 3).
- 2. During installation of Well WCC-3, elevated OVA headspace readings and chemical odors were observed at depths from 55 to 90 feet. Low concentrations of organic compounds were detected in two soil samples analyzed from this boring. These low concentrations indicate that the compounds are probably present in the soil at this location as a result of diffusion of the compounds from the source(s) in the soil and/or ground water as opposed to a direct release.
- 3. Analytical results of water samples from wells WCC-1, -2, -3, and -4 do not indicate the presence of petroleum hydrocarbons. However, volatile organic compounds were found in the water samples. The distribution of concentrations seems to indicate a source of organic compounds originating near the tank cluster 15T through 18T. These tanks and associated piping tested tight during the tank testing program in 1986.
- 4. Ground water elevations from the shallow semi-perched aquifer ranged from -21.41 to -21.94 feet Mean Sea Level. The negative ground water elevations indicate that the ground water is below sea level.

5. Data obtained from observation wells and Boring B-4 indicate that the piping at tanks 19T and 20T is not the source of the organic compounds in the ground water. The area near tank cluster 15T through 18T appears to be a more likely source. In addition, the petroleum hydrocarbons do not appear to have penetrated greater than 50 feet below the surface, and are confined to the area inside Building 41.

6.0 RECOMMENDATIONS

Ground water elevations indicate a gradient to the southeast. Observation Well WCC-5 will be installed within two weeks downgradient along the eastern property line, as shown in Figure 3. This location would detect organic compounds if present in the ground water at the site perimeter. The location was selected based on the ground water gradient established from observation wells WCC-1, -2, -3, and -4, and assumes that hydrogeologic conditions are not significantly different in the proposed location of Well WCC-5.

Between one and three additional borings should be installed near tank cluster 15T to 18T, to evaluate the vertical and lateral distribution of the organic chemicals found in the soil at this location. The results obtained from these borings will help in evaluating whether these tanks are a source of the solvents found in the ground water. The location of the proposed borings will be selected following a review of facility operations at the tank cluster.

Remediation options for cleanup of the fuel oil under Building 41 are currently being evaluated. Options being evaluated include the No Action option and the use of a Vapor Extraction System (VES).

APPENDIX A FIELD PROCEDURES AND METHODOLOGY

(ABC/DAPPA)

APPENDIX A FIELD PROCEDURES AND METHODOLOGY

A.1 GENERAL INFORMATION

Drilling was performed by A & R Drilling, Inc. of Carson, California. Drilling began on 26 October 1987 and was completed on 30 October 1987. Monitoring wells were drilled using a CME 75 with 7-inch outside diameter (O.D.) and 10-inch O.D. hollow stem augers.

A.1.1 Monitoring Well Installation

Monitoring wells WCC-2, -3, and -4 were constructed of 4-inch, Schedule 40 PVC and set to a depth of about 90 to 91 feet. The monitoring wells were installed by drilling a 90-foot deep pilot hole with the 7-inch O.D. hollow stem augers used for soil sampling. Upon removal of the 7-inch hollow stem auger from the hole, 10-inch O.D. hollow stem augers were used to ream the pilot hole to a diameter. A wooden plug was placed in the lead cutting auger to prevent cuttings and water from entering the inside of the auger. Municipal water was added to the inside of augers as drilling progressed through the water table to offset the hydrostatic pressure of the fine grained flowing sands outside the augers. Two attempts were made to install Well WCC-3 without the use of water, but the bottom 3 to 5 feet of the auger "sanded-in" immediately after knocking out The "sanding-in" of the augers prevented the wooden pluq. the wells from being properly constructed. Water had to be used to ensure proper well construction of WCC-2, -3, and -4. The amounts of city water used at each well was noted on the well log forms and samples of city water were collected for possible laboratory analysis.

A.1.2 Well Construction

The monitoring wells were constructed of 4-inch O.D. Schedule 40 PVC flush-threaded blank pipe, and screened with .010-inch slot. Adhesives were not used. Wells were installed with 70 feet of blank casing and 20 feet of screen. The well screen was filter packed using a 1-1/4 inch diameter tremie pipe, to reduce the possibility of sand bridging inside the augers. A filter pack material of Monterey #0/30 sand was selected, based on a field sieve analysis. Filter pack analysis is discussed in Section A.4. The filter pack was placed from the well bottom to about 5 feet above the top of the well screen from 65 to 90 feet.

A five-foot thick bentonite pellet plug was placed above the filter pack, at depths from about 60 to 65 feet, to prevent movement of fluids through the annular space. In addition, bentonite grout was placed at depths from approximately 8 to 60 feet below ground surface. A concrete plug was placed from approximately 8 feet to the surface, to prevent seepage of surface fluids into the well. The top of the well casings were completed 3 to 6 inches below grade and protected with a steel traffic-rated Christy box.

Appendix B presents the Boring Logs and graphic well construction details.

A.1.3 Drilling Residuals

Drill cuttings from each boring were placed in DOT Class 17H 55-gallon drums, and the contents of the drums were labeled using an identification label and permanent ink marker. The drums were sealed and left adjacent to the boring locations. Douglas Aircraft was advised of the locations and contents of the drums, and the need for proper management of the drill cuttings.

A.2 SOIL SAMPLING

Subsurface soil samples were collected at approximately 45, 55, 65, 75, and 80 feet below ground surface. Soil samples were collected for Organic Vapor Analyzer (OVA) headspace measurements, and for laboratory analyses. Soil samples were collected using a California modified sampler. The California modified sampler holds four brass tubes, and is 18 inches in length. Soil sample depths and OVA headspace measurements are shown on the Boring Logs in Appendix B.

A.2.1 OVA Headspace Measurements

Field OVA headspace measurements were taken from one of the soil samples collected at each sampling depth. This procedure was conducted by extruding the contents of one brass tube into a one pint glass jar. The jar's lid has a 1/4-inch diameter hole, which was sealed with duct tape. Approximately 10 minutes was allowed for organic vapors from the soil to reach equilibrium inside the jar. An OVA probe was then inserted through the hole in the jar, and the vapor concentration was measured (in ppm).

A.2.2 Soil Sample Preparation

One to two tubes from the soil sampler were prepared for laboratory analysis. The ends of the tubes were covered with aluminum foil, plastic end caps, and sealed with electrical tape. Soil samples were labeled with the following information:

- · Project number
- Project name
- · Boring number
- · Sample number
- · Soil depth
- Date
- · Person collecting sample

The soil samples were then sealed in Ziploc plastic bags and placed on ice in an ice chest. All soil samples were delivered to West Coast Analytical Service, Inc. in Santa Fe Springs for analysis. Chain-of-custody procedures, includuse of sample identification labels and chain-of-custody forms, were used for tracking the collection and shipment of soil samples. Copies of the chain-of-custody forms are presented in Appendix C.

A.3 FIELD OBSERVATIONS

Observations made by Woodward-Clyde Consultants personnel during the drilling and sampling operations were recorded on Boring Logs, as presented in Appendix B. These observations related to visual soil classifications, geologic and

stratigraphic comments, observation well construction details, sampling efforts, OVA measurements, and other pertinent information.

A.4 FILTER PACK ANALYSIS

Selection of the proper filter pack material and well screen slot size is essential in collecting a sediment-free or low sediment content water sample. In monitoring wells WCC-2, -3, and -4 soil samples were collected from 75 or 80 feet below grade for sieve analysis. Filter pack design calculations were made based on the grain size distribution obtained from these soil samples.

Soil analyses were conducted in the field by collecting a soil sample from below the water table with a California modified sampler. The soil sample was heated with a portable propane stove to evaporate all water from the soil. When the sample was dried, it was weighed on a scale to the nearest gram. The soil sample was then poured into the top of eight sieves and shaken for approximately 5 minutes. The sieve sizes used in the analysis are shown in Figure A-1. The cumulative percent of the soil sample retained in each sieve was weighed and plotted on a sand analysis curve. It is the sand analysis curve that graphically characterizes the grain size distribution of the soil. Sand analysis curves for wells WCC-2, -3, and -4 are illustrated in Figures A-1, A-2, and A-3, respectively.

Calculating the filter pack size was done by multiplying the 50 percent retained size of the formation sample by 2 (Johnson 1986). This value was plotted on the sand analysis

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Project DOUGLAS AIRCRAFT
Project No. 8741863D SAND ANALYSIS - WCC-4

Fig. A.J.

DOE CO COLLEGE

curve. Through this point on the filter pack curve, a smooth curve was drawn representing material with a uniformity coefficient of 2 to 3. The uniformity coefficient was calculated by dividing the 40 percent retained value by the 90 percent value, as shown in the equation below.

Uniformity Coefficient (U.C.) =
$$\frac{U.C.40}{U.C.90}$$

This filter pack curve defined the ideal filter pack required to prevent the entrance of fine silts, sands and clays into the monitoring wells. A ready made filter pack material was then selected that best matched the calculated filter pack curve, since custom made filter pack materials were not readily available. The sand analysis curves for wells WCC-2, -3, and -4 were similar and the soils were classified as fine-grained sands. The filter pack selected for the three monitoring wells was a Monterey #0/30 sand. The sand analysis curve for Monterey #0/30 is shown on Figure A-4.

A.5 WELL DEVELOPMENT AND WATER SAMPLING

Monitoring wells WCC-2, -3, and -4 were developed on 30 October 1987 by Beylick Drilling Company of La Habra, California. The wells were developed by a sand bailer and surge block method for 45 to 60 minutes and then pumped with a submersible pump. Wells WCC-3 and WCC-4 had 165 gallons of water removed during development. Well WCC-2 had 225 gallons removed during development. Table A-1 presents the development times and the ground water volumes removed.

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TABLE A-1
WELL DEVELOPMENT SUMMARY

Well No.	Sand Bailer and Surge Block Time (min)	Sand Bailer Volume Removed (gal)	Pumping Time (min)	Pumping Volume Removed (gal)	Total Volume Removed (gal)	Comments
ACC-S	60	80	35	145	225	Water clear after pumping 90 gallons
NCC-3	45	15	40	150	165	Water clear after pumping 95 gallons
MCC-4	45	40	35	125	165	Water clear after pumping 75 gallons

The last 50 to 55 gallons removed from the three monitoring wells was observed to be sediment free.

Water removed from the wells during development was contained and sealed in DOT Class 17E 55-gallon drums adjacent to the wells. The drums were labeled for contents, date, and well number.

Observation wells WCC-2, 3, and 4 were sampled on 2 November 1987. Each observation well had a minimum of three well casing volumes removed before a ground water sample was collected. Electrical Conductivity (EC) and temperature was recorded from each five gallons of ground water removed from the well. Stabilized EC and temperature values indicated that ground water from the aquifer formation was being extracted from the well. Table A-2 presents EC, temperature, and ground water volume data recorded during water sampling. The water removed from the wells is being stored on-site prior to disposal.

Monitoring wells were bailed with a PVC 3-1/2 inch PVC bailer. This bailer was washed with Liquinox detergent and rinsed with deionized water between usage in each well. The 3-1/2 inch diameter PVC bailer was only used for well volume removal and was not used for water sampling. After a minimum of three well volumes had been removed, and EC and temperature stabilized, a water sample was collected using a clean, 2-inch diameter Teflon bailer. Each well was sampled with a different 2-inch bailer to minimize the potential for cross-contamination.

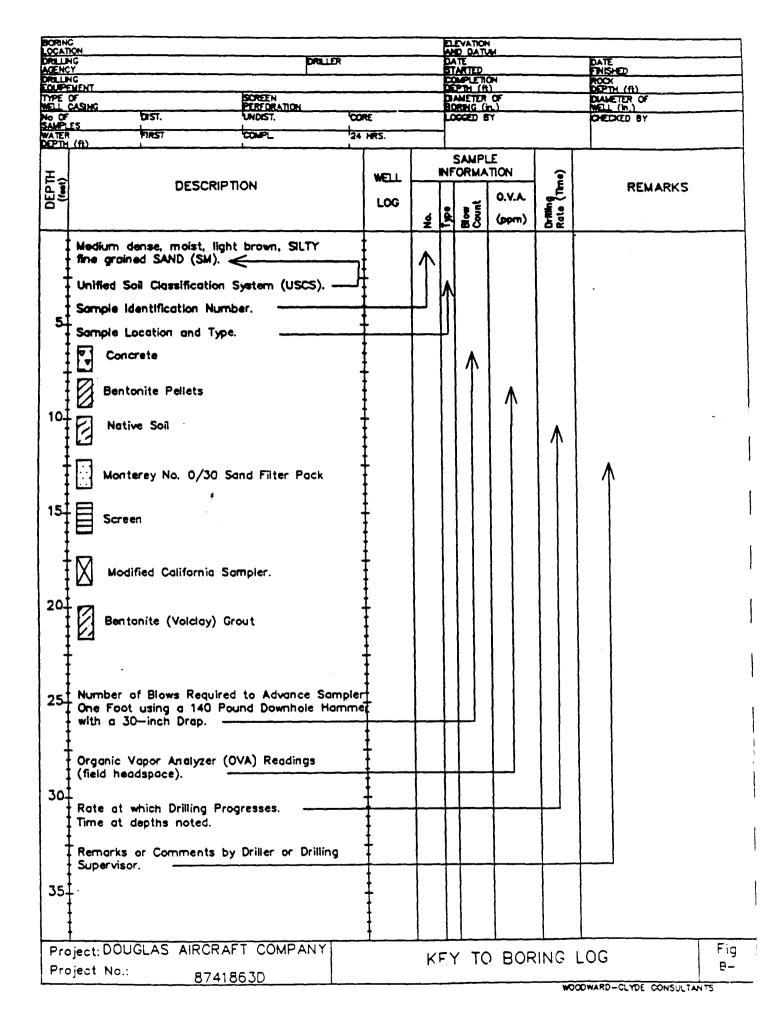
TABLE A-2
WATER SAMPLING ELECTRICAL CONDUCTIVITY AND TEMPERATURE DATA

Well No.	Sample Interval (gal)	Electrical Conductivity EC - umhos	Temperature C'
WCC-2	0-5	750	22.5
	5-10	1,000	22.5
	10-15	1,000	22.5
	15-20	1,000	22.5
	20-25	1,000	22.5
	25-30	1,000	22.5
	30-35	1,000	22.5
WCC-3	0-5	2,250	23.0
	5-10	2,100	23.0
	10-15	1,950	22.5
	15-20	2,000	22.5
	20-25	2,000	22.5
	25-30	1,900	22.5
	30 - 35	1,800	22.5
<u>:</u>	*		
WCC-4	0-5	1,000	25.0
	5-10	1,050	22.5
	10-15	1,050	22.5
	15-20	1,050	22.5
	20-25	1,050	22.5
	25-30	1,050	22.5
	30-35	1,050	22.5

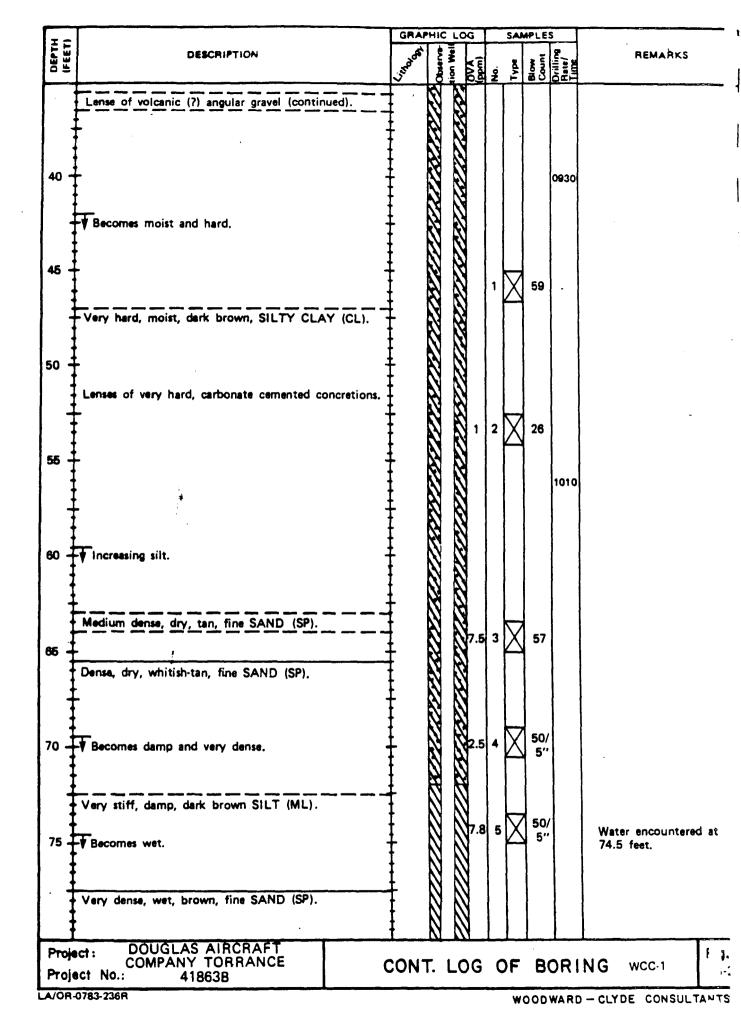
NOTE: Water samples collected 2 November 1987

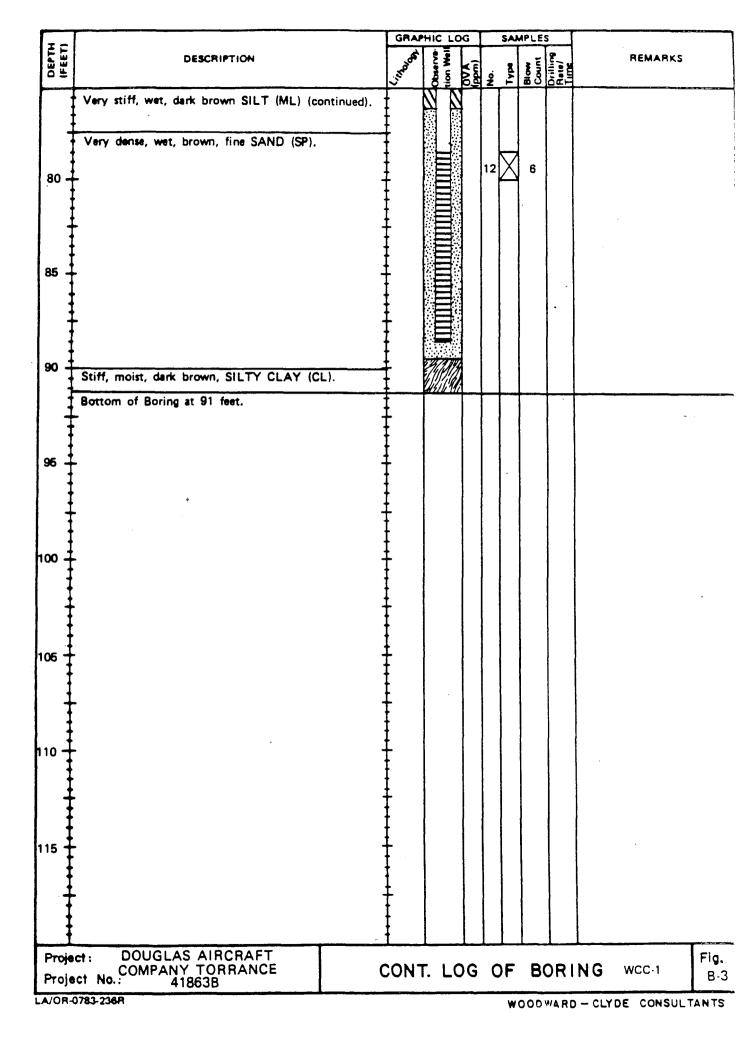
APPENDIX B BORINGS LOGS

(ABC/DAPPA)



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Bentonite Pellet Plug and Bentonite Grout S. Donaldson B. Jacobs DESCRIPTION DESCRIPTION Asphalt Damp, reddish-brown, SILTY SAND (SP) with day and gravel. Becomes reddish brown, no gravel. The Becomes medium brown. CLAYEY SAND (SC). Stiff, damp, medium brown, CLAYEY SILT (ML) with some fine sand. S. Donaldson B. Jacobs REMARKS REMARKS REMARKS REMARKS REMARKS REMARKS REMARKS Savetus Ogos Saketus Ogos Fig. 12 ppm Ogos Savetus Ogos Beckground OVA reading = 1.2 ppm Ogos Fig. 10 ppm Ogos Fig. 1	TYPE	No. 12 Silies Soud					/4.:		i Y
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A & R Drilling, Inc. CMB 75, 100-inch H.S.A. Signat 4* Sch. 40 PVC State 1. 100 Sint 1.	TING XCATK				ELAN	VATION D DATU			casing © 50.59 ft.
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DESCRIPTION DESCR	TER	FIRST 77 COMPL 124	HRS. 71	1.1	7	r	ı. Key	es	B. Jacobs
DESCRIPTION LOG ABCHOIL ABCHOIL Medium stiff, very moist, dork yellowish brown. Becomes very dark grayish brown. Color change to yellowish brown. Becomes stiffer leas maisture. SANDY CLAY (CL). Continued SANDY CLAY (CL). Less stiff, more moist. Continued SANDY CLAY (CL). Medium stiff, very moist, alive brown, SILTY CLAY. 1319 Crades to SILTY CLAY (CL). Medium stiff, very moist, alive brown, SILTY CLAY. LOG OF FORING WCC-2 F									
Asonbit Medium stiff, very moist, dark yellowish brown. Grades to Silty CLAY (CL). Grades to Silty CLAY (CL). Medium stiff, very moist, olive brown, Silty CLAY. LOG OF FORING WCC-2 Forest Douglas AirCraft Company LOG OF FORING WCC-2 Forest Douglas AirCraft Company	3	DESCRIPTION	1			ORMA		The)	REMARKS
Medium stiff, very moist, dark yellowish brown. 1306 Background OVA reading = 5 ppm			LOG	ģ	è	Sount		Orming Rote (
Color change to yellowish brown. Becomes stiffer less moisture, SANDY CLAY (CL). Continued SANDY CLAY (CL). Less stiff, more moist. 1317 Grades to SILTY CLAY (CL). Medium stiff, very moist, olive brown, SILTY CLAY. 1323 1327 1333 Toject: DOUGLAS AIRCRAFT COMPANY LOG OF BORING WCC-2	- F	Medium stiff, very moist, dark yellowish brown, SANDY CLAY (CL).	XXXXXXX						
Continued SANDY CLAY (CL). Less stiff, more moist. Grades to SILTY CLAY (CL). Medium stiff, very moist, olive brown, SILTY CLAY. 1323 1327 1333 Toject: DOUGLAS AIRCRAFT COMPANY LOG OF FORING WCC-2		Color change to yellowish brown. Becomes stiffer less maisture, SANDY CLAY (CL).						1308	~ .
Grades to SILTY CLAY (CL). Medium stiff, very moist, olive brown, SILTY CLAY. 1323 1327 1333 1349 1327 1327	5++++++							1317	-
1323 1327 1333 1309 1009 1009 1009 1009 1009 1009	0	Medium stiff, very moist, olive brown, SILTY						1319	
1327 1333 Troject: DOUGLAS AIRCRAFT COMPANY LOG OF FORING WCC-2	5							1323	
roject: DOUGLAS AIRCRAFT COMPANY LOG OF FORING WCC-2	0							1327	
LOG OF HORING WCC-2	5-							1333	
LOG OF HORING WCC-2	roi	ect: DOUGLAS AIRCRAFT COMPANY		1.4	~~		200	11.1.	MCC-2 Fi
		· ·		Ľ(JG	UF	HUK	JING	WCC-Z

DEPTH (feet)	DESCRIPTION	1	ETT	ó	•dK	Blow	O.V.A. (ppm)	Drilling Rate (T.)	REMARKS
40	(continued) Stiff, moist, olive brown, SILTY CLAY (CL).								
45	Dense, moist, olive brown, fine grained, SILTY SAND (SM), with shells.	TANKS TO THE PROPERTY OF THE PARTY OF THE PA		1	X	34	5	1342	
50		MANAGE AND ADDRESS OF THE PARTY						1357	
55	Very dense, damp, strong brown, fine grained SAND (SP) to SILTY SAND (SM), iron oxide staining.			2	X	60	5	1402	-
60	T Becomes SICTY SAND.							1423	
65	Dense, moist, clive, fine grained SILTY SAND (SM), some iron exide stains.			3	X	42	6	1433	
70								1500	₩
75	Becomes wet. Very dense, wet, olive brown, fine grained, SILTY SAND (SM).			4	X	68	6	1512	∑ Water at 73 fee
80		+						1544	
-	ect: DOUGLAS AIRCRAFT COMPANY ect №o.: 87418632	C	TNC	. L()G	OF	BOR		WCC-2 Fig. B-1- DWARD-CLYDE CONSULTANTS

DEPTH (Sec)	DESCRIPTION	METT	و	•	e te	0.V.A	Ortling Rate (T.)	REMARKS
85	(continued) Very dense, wet, olive, fine grained to very fine grained SILTY SAND (SM), micaceous, with some clay interbedding and iron oxide staining.	8			50/ 3"	(ppm)	16∞	
90]	Bottom of Boring at 90.5 feet.			H	-	 		Note: 48 gallons of city
95		• • • • • • • • • • • • • • • • • • •						water used to offset hydro static head of flowing sands during well installation.
100		•						<u>-</u> .
105		* * * * * *						
110		† + + + +						
115		† †						
120		+						
125		+						
	ject: DOUGLAS AIRCRAFT COMPANY ject No: 8741863D	CONT	. L(OG	OF	BOR	RING	WCC-2 Fig. B-1
	8741863D						wo	B-1

BORIN LOGAT	WCC-3 See Figure 2		Ē	LEVATION NO DATU	, To	op of	Casing ● 51.19 ft.
DRILLI	IG A & R Drilling Inc PRILER	M. Smit	, L	ATE TARTED_	10-2	6-87	DATE 10-26-87
	CME 75, 10-inch H.S.A.		ç	OMPLETIO	N	92	ROCK
TYPE		0 Slot		AMETER ORING (in	OF.	10	DIMETER OF 4
No OF	DIST. UNDIST. 6 CO	RE _		000ED 51	1	.,	CHECKED BY
WATER	FIRST 77 E COMPL '24	HRS. 74	.0	F	i. Rey	es	B. Jacobs
DEPTH (feet)	DESCRIPTION	roc Mett		SAMPL FORMAT		Orilling Rate (Time)	REMARKS
10	Demp, very dark grayish brown, fine grained SILTY SAND (SM) with small gravel. Soft, very moist, dark gray to black SILTY CLAY (CL). Becomes less moist, dark yellowish brown, stiff. Continued SILTY CLAY (CL). Becomes more stiff, no detectable odor. Dense, moist, yellowish brown, CLAYEY SAND to SANDY CLAY (SC-CL). Grades to SILTY CLAY (CL). Stiff, moist, dark yellowish brown SILTY CLAY.					O846 O855 O857	Background OVA reading = 4-6 ppm No odor.
35						0913	
Pro	ect: DOUGLAS AIRCRAFT COMPANY				500	INIA	WCC-3 Fig.
	inat Na.		LO	i OF	BOR	ING	$WCC-3 \qquad \begin{array}{c} -19. \\ 5-2-1 \end{array}$
	8741863D						
						WOO	DOWARD-CLYDE CONSULTANTS

DEPTH (Mat)	DESCRIPTION	rog METT	ó	•dK_	Blow	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS
40	(continued) Stiff, moist, olive brown, SILTY CLAY (CL).		٠				0921	
45	Lens of stiff, moist, olive, SANDY SILT (ML), micaceous with decomposed pieces of roots.		1	X	25	30	0924	Earthy odor.
50	Clay becomes more stiff, interbedded with lenses of dense, moist, yellowish brown,						0937	
55	medium grained SILTY SAND (SM) with shells, partially comented and crystalized calcite.		2	X	30	570	0945	Moderate chemical odor.
60	Dense, moist, yellowish brown to olive gray,						1005	
65	very fine grained SILTY SAND to SAND (SM-SP), micaceous.		3	X	46	440	1015	Moderate to strong chemical odor.
70	Very stiff, very moist, olive brown, SANDY SILT (ML), micaceous with iron oxide stains.		4	X	35	+100	0 1035	Very easy drilling. Strong chemical odor.
75	Becomes wet. Very dense, wet, olive brown fine grained SAND (SP) to SILTY SAND (SM).		5	X	59	+100	0 1047	▼ Water at 73.5 feet. Strong chemical odor.
80	Becomes medium grained.		6		N.R	.+100	0 1112	2
	ject: DOUGLAS AIRCRAFT COMPANY ject No.: 87418630	CONT	. L) ()	OF	BOR		WCC-3 Fig. B-2- DODWARD-CLYDE CONSULTANTS

DEPTH (hat)	DESCRIPTION	METT	ó	Type	Blow	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS
85	(continued) Very dense, saturated, clive brown, fine to medium grained SAND (SP-SM) with some silt.						1205	Moderate to strong chemical odor.
90							1545	
95	Battom of Boring at 92.0 feet.							Note: Used 59 gallons of city water to offset hydrostatic head of flowing sands during well installation.
100		+						
105	* .	+						
110								
115		+ + + + + + + + + + + + + + + + + + + +						
120								
125		† † †						
1	ject: DOUGLAS AIRCRAFT COMPANY ject No.: 8741863D	CONT	. LC	L OG —	OF	BOR		WCC-3 Fig. B-2-3

a was an administration of the second

OGAT	G YON				C-4				ure 2					21	VATION DATU				sing • 49.69 ft	
ACENO	NG 'Y	Α	& I		illing			لــــــــــــــــــــــــــــــــــــــ	DATTEL		1. S	Smit	h	於	KIED VIED	10-2			NISHED 10-27-8	7
	IG MENT								<u>H.S.</u>					ď	PL (R		1.5		ROOK SEPTH (ft)	
	CASING_	4	Sch		PV		ERF OR				<u>S</u>	lot		Ę	METER BNG (Ir	<u>y</u>	10		MELL (In.)	
	ES (ft)		MAST.		- 75		MOST.		8 -	24	HRS.	71	.6		1	l. Rey	es		B. Jacobs	
DEPTH (feet)				DE	SCRIF	της	ж				WE	ł		NF	AMPL DRMA		Orithe Rate (Time)		REMARKS	
10 15 20 25		CCL.	t ye		h bro	- ₩n,	SILTY	GĀ.	Some Y (GL)									re	ackground OVA rading = 4-6 pp	
i .	oject:		GLA	S Al	RCR.	AF	CO	MPA	NY		<u> 71</u>	_ <u>_</u>	<u>1 </u>	00	OF	BOF	RING		WCC-4	F
۲۲۹	oj e ct	NO.:			874	186	35										w	000	WARD-CLYDE CONSULTANTS	; - _

DEPTH	DESCRIPTION	MELL	Š	•ox.	Blow	O.V.A. (ppm)	Drilling Rate (T.)	REMARKS
40	•							
45	Very stiff, organic roots and plant detritus with arangish fron exide staining.		1	X	18	8	1345	No odor.
50								
55	Occasional fossilif era us [‡] gravel.		2	X	23	8	1350	No odor.
65	occusional Iossiin a ous _, gravei.							
70	Hard, light olive brown, fine SANDY SILT to SILTY fine SAND (SM).		3	X	43	5	1425	No odor.
75	Becomes wet. Hard, damp, light olive brown, SILTY CLAY (CL) with iron oxide staining.		4	X	42	7		∑ Water at 75 feet.
80-	Very dense, light olive brown, fine grained SAND (SP) with little silt. 2 inch layer of CLAY (CL).		5	X	45	8	1530	No odor.
Proj Proj	ect: DOUGLAS AIRCRAFT COMPANY e No.: 87418630	CONT.	. L	DG	OF	BOR		WCC-4 Fig. B-3-

				1 1	,			
DEPTH (feet)		FOC	ģ Z	-dK	Gount	0.V.A. (ppm)	Drilling Rote (T.)	REMARKS
85	(continued) Very dense, wet, light olive brown, fine grained SAND (SP) with little silt.							
90	Maria Raha ali a harra SI TV CLAV (M. C.)		6	M	N.R.	8	1700	No odor.
95	Moist, light clive brown, SILTY CLAY (ML—CL). Bottom of Boring at 91.5 feet.	200					1700	Note: 45 gallons of city water used to offset hydrostatic head of flowing sands during well installiation.
100		+						
105	• · · · · · · · · · · · · · · · · · · ·	+						
110-								
115								
120		+++++++++++++++++++++++++++++++++++++++						
125		+						
i	pject: DOUGLAS AIRCRAFT COMPANY pject No.: 8741863D	CONT	ī. L	00) OF	₽/2%		WCC-4 F 3-

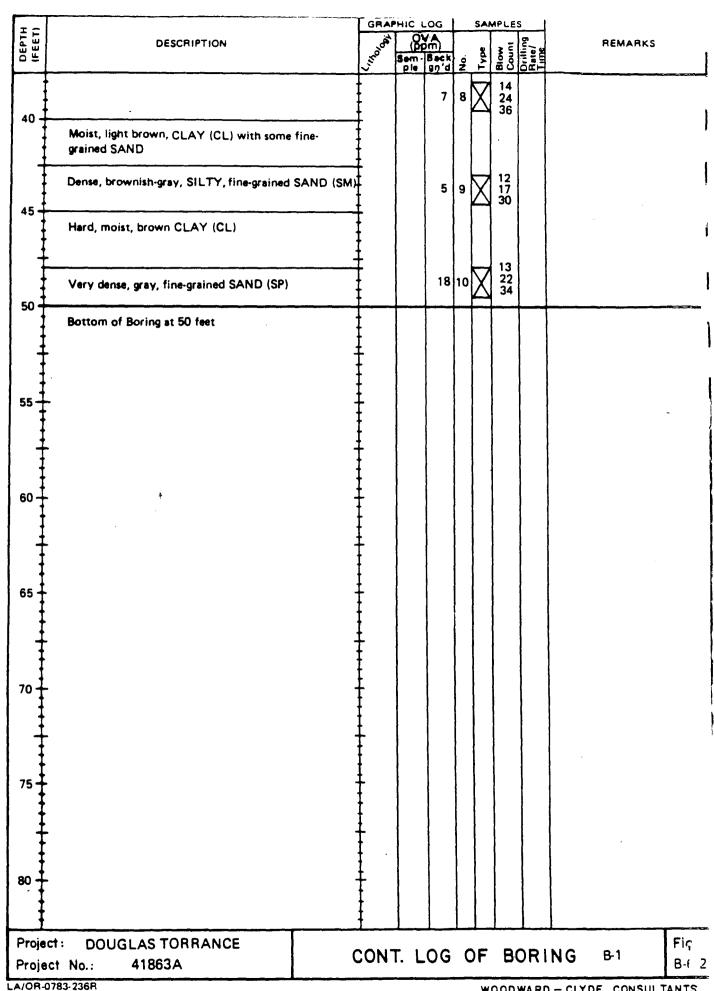
BORIN				EL	AOITAVE DATE	i JM		Not Available	
DRILLI	A & R Drilling, Inc.	. Rome	ero	DA ST	TE ARTED	8-24	- 87	DATE 8-24-	-87
EQUIP	MENT			DE	MPLETI	1	41	ROCK DEPTH (ft)	<u> </u>
WELL		V/A		80	METER RING (i GGED B	n.Σ	8	DIAMETER DF WELL (In.)	
NO OF SAMPL WATER DEPTH	ES	HRS	- - -	-		Glaesi	man	снескей ву М. Razmd	joo
		WELL			SAMPI ORMA		le)		
DEPTH ((eet)	DESCRIPTION	LOG	No.	Туре	Blow Count	0.V.A. (ppm)	Drilling Rate (Time)	REMARKS	
	Asphalt covering. Medium dense, damp, yellowish brown, SILTY fine to medium grained SAND (SM), micaceous, 4—inch CLAYEY layer near surface. (FILL)		1	X	9	10		Definite odor.	
5-	Loose, damp, yellawish brown, fine to medium grained SAND (SP—SM), with some SILT, micaceous, (FILL).		2	X	2	52	1240	Strong odor.	
10-	Color changing to gray with some yellowish brown mixed in. Less silt, micaceaus (SP).(FILL)		3	X	2	600	1250	Strong odor.	-
15	Stiff, moist, olive brown, CLAYEY SILT (ML), micaceous.		4	X	11	>1000	1300	Strong odor.	
20	Stiff, moist, olive brown, SANDY SILT (ML), micaceous.		5	X	9	>1000	1310	Strong odor.	
25	Stiff to very stiff, mast, alve brown, CLAYEY SILT (ML).		6	X	14	>1000	1320	Strong odor.	
30			7	X	20	>1000	1335	Strong odor.	
35	With some fine grained SAND (ML).	T	8	X	10	>1000	1345	Strong odor.	
	ect: DOUGLAS AIRCRAFT COMPANY ject No.: 8741863C		LC)G	OF	BORI		15TB	Fig. B-4-1

DEPTH (feet)		WELL LOG	Š.	Type	Blow Count	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS	
40-	Stiff, moist, olive brown, CLAYEY SILT (ML), micaceous.	+	9	X	17	>1000	1400	Strong odor.	
	Bottom of Boring at 41 feet.	+							
45		+						~	
50-		+ + + + + + + + + + + + + + + + + + + +							
55	· · · · · · · · · · · · · · · · · · ·	† † † †							
		+							
60-		† † †						-	
65	- -	-							
	• •	‡							
70	·	+							
75		† + + + +							
80-		† † † †							
	ject: DOUGLAS AIRCRAFT COMPANY	CONT	. L(L OG	OF	BOR	ING	15TB	Fin B-4 !
	ject No.: 8741863C			-			wo	ODWARD-CLYDE CONSULTAN	

DRILING COMPRISENT CME 45, 8-inch 0.D.,H.S.A.		Not Available
CAMPAN C	-24-87	DATE 8-24-87
DESCRIPTION N/A SAME N/A N/A SAME N/A	41	ROCK — DEPTH (ft) —
SAMPLE NORTH (II) PIRST COMPL 24 HRS. OCCUPING NATION DESCRIPTION Asphalt covering. Medium dense, moist, yellowish brown, SILTY fine to medium grained SAND (SM), micaceous. (FILL) SLIFF to very stiff, moist, yellowish brown, SANDY SILT (ML), micaceous. 3 × 16 22 × 2 × 2 × 2 × 3 × 3 × 16 33 × 16 34 × 12 × 45 35 × 17 66 36 × 17 95 37 × 18 >10 DESCRIPTION DESCRIPTION Asphalt covering. Medium dense, moist, yellowish brown, SANDY SILTY (ML), micaceous. 3 × 16 SLIFF to very stiff, moist, yellowish brown, SANDY SILTY (ML), micaceous. 3 × 16 38 × 16 × 17 95 39 × 17 66 30 × 17 95 31 × 18 × 10	8	DIAMETER OF N/A
DESCRIPTION WELL SAMPLE NFORMATION DESCRIPTION WELL LOG S		CHECKED BY
DESCRIPTION WELL NOTIFICATION DESCRIPTION DESCRIPTION WELL NOTIFICATION Asphalt covering. Machine dense, moist, yellowish brown, SILTY fine to medium grained SAND (SM), micaceous. (FILL) Stirf to very stiff, moist, yellowish brown, SANDY SILT (ML), micaceous. 3 16 17 30 30 30 30 30 30 30 30 30 3	aesman	M. Razmdjoo
Asphalt covering, Medium dense, moist, yellowish brown, SILTY		
Asphalt covering, Medium dense, moist, yellowish brown, SILTY	Drilling Rate (Time)	REMARKS
Asphalt covering, Medium dense, moist, yellowish brown, SILTY	/.A. 60 \	
Asphalt covering. Medium dense, moist, yellowish brown, SILTY fine to medium grained SAND (SM), micaceous. (FILL) 5 2	m) 📆	
Stiff to very stiff, moist, yellowish brown, SANDY		Little odor.
Stiff to very stiff, moist, yellowish brown, SANDY		
5 2 2 20 30 3 16 3 16 3 3 16 3 3 3 3 3 3 3 3 3		
Stiff to very stiff, moist, yellowish brown, SANDY 3 16 30 3 16 30 3 16 30 3 3 3 3 3 3 3 3		-
Stiff to very stiff, moist, yellowish brown, SANDY 3 16 30 3 16 30 3 16 30 3 3 3 3 3 3 3 3		
Stiff to very stiff, moist, yellowish brown, SANDY 3 16 30 3 16 30 3 16 30 3 3 3 3 3 3 3 3	00 1510	Sample was between the
3		tank backfill and natural
3		material. One edge of sample included natural
3		material, SANDY SILT (ML)
3		(me)
10	0 1515	
15 4 X 12 45 20 5 X 17 66 25 6 X 17 95 30 30 30 30 10 10 10 10 10 10 10 10 10 10 10 10 10		No odor.
20	İ	-
20		
20		
20		
20		
20	_	Slight odor.
25 6 7 17 95 30 30 30 30 30 30 30 30 30 30 30 30 30 3	5 1530	
25 30 30 30 30 31 31 32 35 35 35 36 37 38 30 31 31 32 35 35 36 37 38 30 30 30 30 30 30 30 30 30		
25- 30-3 Olive brown, CLAYEY SILT layer (ML). 7 18 >10 8 16 >10		
25 30 30 30 30 31 31 32 35 35 35 36 37 38 30 31 31 32 35 35 36 37 38 30 30 30 30 30 30 30 30 30		
25 30 30 30 30 31 31 32 35 35 35 36 37 38 30 31 31 32 35 35 36 37 38 30 30 30 30 30 30 30 30 30		
25- 30-3 Olive brown, CLAYEY SILT layer (ML). 7 18 >10 8 16 >10	1540	Slight odor.
30 30 Olive brown, CLAYEY SILT layer (ML). 7 18 >10 8 16 >10	,0 1040	Ging. 1.
30 Olive brown, CLAYEY SILT layer (ML). 7 18 >10	İ	
30 Olive brown, CLAYEY SILT layer (ML). 7 18 >10		
30 Olive brown, CLAYEY SILT layer (ML). 7 18 >10		j
30 Olive brown, CLAYEY SILT layer (ML). 7 18 >10		
30 3 Olive brown, CLAYEY SILT layer (ML). 7 18 >10 8 16 >10	50 1545	Definite odar.
35 8 16 >10	JU 1545	
35 8 16 >10		
35 8 16 >10		
35 8 16 >10		
35 8 16 >10		
35 8 16 >10		Strong odor.
35 8 16 >10	000 1600	Strong oddr.
Project DOUGLAS AIRCRAFT COMPANY		}
Braingt DOUGLAS AIRCRAFT COMPANY	ł	
Project: DOUGLAS, AIRCRAFT, COMPANY		}
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Project DOUGLAS AIRCRAFT COMPANY	000 1610	}
Project: DOUGLAS AIRCRAFT COMPANY	300 1010	
Project: DOUGLAS AIRCRAFT COMPANY		
1 1 DG OF AC		17TD Fig.
	JKING	17TB 119.
8741863C 8741863C		OWARD-CLYDE CONSULTANTS

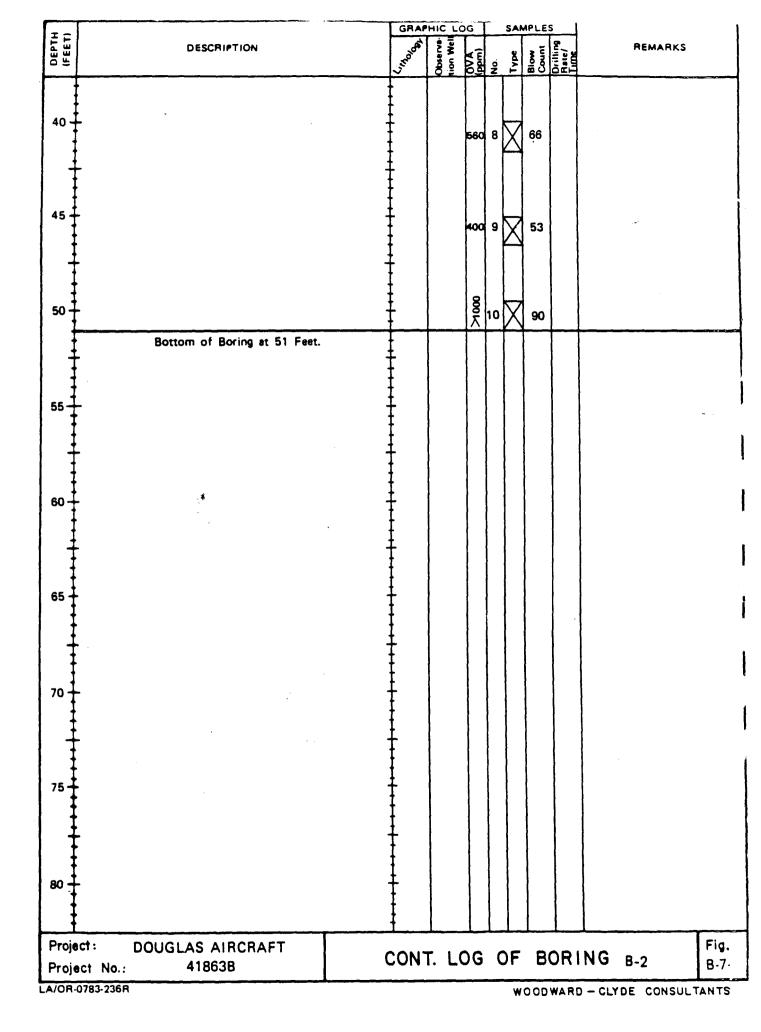
DEP TH (feet)	DESCRIPTION	WELL	o X	- 0×	Blow Count	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS	
40-	Very stiff, moist, clive brown, CLAYEY SILT (ML), little mica.		9	Ž		>1000			
	Battom of Boring at 41 feet.				20			Note: Vertical b	oring.
45-	-								
	· · · · · · · · · · · · · · · · · · ·								
50		† †							
55		† †							- .
60	· · · · · · · · · · · · · · · · · · ·	† †							
65	·	† †							
70								·	
		<u> </u>							
75		‡ ‡							
		 							
80		‡							
Pro	ject: DOUGLAS AIRCRAFT COMPANY	CONT					1010	17TD	Fiç
	ject No.: 8741863C	CONT	. L(<i>-</i>	<u> </u>	BOK		17TB	B-5 _

LOCA	NG B-1 Tanks T-19 and T	r ∙20			ELE	VAT	HON					
	LING Day England	A ED	Ceith						1 1986	DAT	HED 4	April 1986
IORIL		<u>.</u>			COP DEP		TIO	N	50	POC	H(FT)	
DIAM	ETER AND TYPE None Installed				OF :	NO	e E	DIS	1	บังเอ	151	COME
TYPE	OF Not Applicable				W	ATE	.A	FIR	ST_	СОМ		24 HAS.
TYPE	OF PERFORATION No. 60 Sand (85%) / Bentor	nite Flour	(15%)			_	(FT O BY			CHE	CKED	IY:
TYPE		11011001	(13/0)		-			Leac	h	1		lacobs
SEAL	Aspiration		GRA	HIC I	06	_	SAI	APLE.	•			
DEPTH (FEET)	DESCRIPTION		- A		(A)	_						
FE	DESCRIPTION		J. Sept.	Sem.	Back		2	3 5	Drilling Rate/ Time		REMA	AKS
<u> </u>			3	ple	an'd	2	ž	<u> </u>	021			
	- Aspelt		†								e.	
1 1	Rust colored, SILTY SAND (SM)	/ :		İ		ll	- [İ			
	Medium stiff, moist, dark brown, SANDY C	LAY T	†									
		•	ł	0.0		1	\bigvee	6 4				
5-			F				\triangle	3		-		
"}	Becomes very moist	•				1 1	ı					
1			ţ				١					
1 4	• •	-	ţ	}								
			t				7	15				
1 1	T Booming light roddish brown and hard			30	1	2	XI	22				
10	Becoming light reddish brown and hard	-	-					35				
1 1			Ī	1			1		!			~
		:		ļ \$								
1 1	•	-	t	i	ļ			_				
ł		•	1	24		3	∇	6 12	1			
<u>ا</u> ہے ا	T Bassarias timba bassarias	3	1	34	1	١٦	\triangle	16	} }			
15	Becoming light brown and very stiff		-						1			
		•	ţ		}							
			<u> </u>	1								
l	Medium dense, moist, light brown, CLAYE's grained SAND (SC)	Y, TINE-	ł		}			11				
1	granad SAND (SC)			100	1	4	X	8				
20 🕇	_ _	-	,		ļ			13	1			
	Becoming lighter brown and drier		ţ									
İ		-	ł									
+		-							}			
Ŧ			Ţ					8	1 1			
‡			ţ	50		5	X	16 18	1 1			
25	Very stiff, moist, light brown, SANDY CLA	V ICI V	†					'0				
	very still, moist, light brown, SAND I CEA	T (CL)	t	[1			
l			Ł					[
T			ĺ	1	1		k -	8				
			Ţ	45	1	6	X	15				
30 ‡			F		1	1		30				
‡	Very stiff, moist, light brown, CLAY (CL)	:	†	1		l	1					
1		•	ţ	1			1		1			
1			t									
Ŧ	Very dense, light grayish-brown, fine-grained	d	Ī	4	1	7	∇	9 27				
‡	SAND (SP)		Ţ	~		1	abla	50] [
35 +	,	-	T .	1	l			(4"	4			
l			<u> </u>	1			1					
I			Ł	L	L			L				
Proje	ct: DOUGLAS TORRANCE											Fig.
	20002/10 / 0///// ///02			l	_OG	•	DF	В	ORI	NG	B-1	B-6-
	ect No.: 41863A											D.O.
LA/OR-	0783-235R						W	000	WARD	-CLY	E CO	NSULTANTS



SORING LOCATI	ON Boiler Room At T-19, 20 (C-6 Fa	cility)	7	LEV	ATIO	N IM	Appr	oximately 52 Feet MSL
DAILL		ILLER Kit Stephe		AT	TED		9/86	PINISHED 1/5/87
	Simco 2400SK, Datum D27-L (Di			O.	LET		51	IROCK _
DIAME	ER AND TYPE 6" Hollow Stem Auger:						т	UNDIST. 20 COME _
4.4 6	NI/A			W	TEN	FIR	8T _	COMPL 24 HRS
PAR O	PERFORATION N/A				TH (F			CHECKED BY:
PACKE!	Concrete, #60 Silca Sand (85%) and Bent	togite (15%)	_	Ja			ildson/	' Sd
SEAL	Concrete, #60 Stica Sand (65%) and bein	GRAPH	IC LO	g I		Gibson MPLE		
FE	DESCRIPTION	A	1	_			•	5711
DEPTH (FEET)	DEBONIF HON				<u>و</u> غ ي	100		REMARKS
		15 18	2 2	<u>5 8</u>	Z F	130	DEF	
- 1	Concrete and pea gravel.		l			+		Hydrocarbon odor
#	Stff, damp, olive to brown SILTY CLAY (CL-CH).			250		NR		
5		‡ ‡ ‡		300	2	NR		Hydrocarbon odor and staining throughout boring.
10		+		140	3	NR		~ .
15	Becomes olive to dark olive green.	+ + + + + + + + + + + + + + + + + + + +		440	4	NR		
20		+ + + + + + + + + + + + + + + + + + + +		0001 √	5	NR		
25		+		560	6	NF	1	
30	Gravel lense (to 2"ダ).			460	7 5	NF	3	Drilling difficult- Stop drilling. Commence drilling at 31 on 1/5/87 with datum
35	Becomes hard and grey, sandy, and thinly laminated. Becomes silty.			000 X	7	75	5	D27-L rig.
Projec Proje	ct: DOUGLAS TORRANCE		L	OG	0	FE	BOR	ING B-2 Fig. B-7-
								D-CLYDE CONSULTANTS

.....



LOCA	TION Boiler Room at T-19, 20 (C-6 Facility)			AND	PATIC	XN UM	Appox	imately 52 Feet MSI	
AGEN	Datum Exploration, Inc	(it Step		STA	E ATED	1,	6/87	FINISHED 1/6/8	
ORIL EQUI	Datum D27-L (Dietrich Gasoline Engine)			COM		1	31'	IROCK -	
DIAM OF W	6" Hollow Stem Auger; No Casing	install	led	OF E	NO.	ESI	л	UNDIST. 12 COME	
Ten.	ONATION N/A			DE	THE	<u> 111 </u>	Nor	ne COMPL 24 HP	18
	OF PERFORATION N/A			LOG	GED			CHECKED BY:	Ì
SEAL	OF Concrete, #60 Silca Sand (85%) and Bentonite (1					Donald		Sd	
EE		GRAP	HIC LO	×G	<u>s</u>	AMPLE	S		
DEPTH (FEET)	DESCRIPTION	300	2 2	20VA Type Count Term			E 3 E	REMARKS	
	•	3	8 3	53	<u>g</u> }	. इ.८	265	······································	
	Concrete	†				}	1 1		Ì
	Dense, damp, light grey, fine SAND (SP) with	1							Ì
1 3	FeO ₂ staining and hydrocarbon odor.	Ŧ			1		1 1		İ
1 }	Stiff, damp, dark brown SILTY CLAY (CL-CH).	ł						•	
5-		Ŧ			. $\overline{}$	d			
		<u> </u>		310	ľZ	48			
	•								
1 1	, , ,	†							
1 1	la la la la la la la la la la la la la l								
10-	☐ Gravel lense (< 2"Ø). Becomes hard.	†		105	2	7 30	1		
1 1	y Boomes Hard.	‡				50/			
1 4	· •	+							
1 1		‡							
1 ‡	Medium dense, demp, grey CLAYEY SAND	‡						Easier drilling	
15	(SC) strong hydrocarbon odor.	Ī .		62	3	27		Eggiot Grining	
		‡			K	7			
	-	‡				j			
		1				j			
20	T	Ī			ΙL	╛	1 1		
2º	Becomes dense and greyish brown.	Ī		350	4	47			
		1			l K	4			
Ιŧ	•	Ŧ	ļ						
		t		1					
25	Becomes very dense, grey, more	Ī							
** 	SANDY (SC-SP).	ŧ :	1	260	5)	65			
I	·	İ			1 K	4			
{	•	†							
		‡		}		_		•	
30	. ·	‡		340	6	66			
	Bottom of Boring at 31 Feet.	1			T	1	1 1	· · · · · · · · · · · · · · · · · · ·	
		‡				-			
‡	•	Ŧ	1						
		‡							
35		‡				1			
‡		‡	}			1			
<u> </u>		<u> </u>	<u></u>						
Proje	et: DOUGLAS AIRCRAFT		· · · · · · · · · · · · · · · · · · ·	_		_			Fig.
	ect No.: 41863B		L	OG	0	F 8	ORII	NG 8-3	B-8-1
	0783-235R	***************************************			- ,	W6 = -		01705 00110111 7	
	0700°20011					WOO (WARD	-CLYDE CONSULTA	KI NA

CRINC	Douglas Aircraft C-6 Facili	ty See	Мар		EL	EVATION ID DAT	1 JM	N	ot Avai	lable	
RILLIN	IG A & P Drilling ORI		И. Smi	th	DA	ARTED	5-26		DATE IFINISHED		-87
₹		H.S.A			ICC	MPLETI	ξ N 6	1.5	ROCK DEPTH ((1)	_
PE (F SCREEN				IDI.	AMETER RING (i	OF	8	DIAMETE	R OF _	_
Q.	DIST 'UNDIST. 10	COF	₹E		LC	GCED B	Y		CHECKED		
MPL	ES FIRSTCOMPL	124	HRS.		-	Ρ.	Glaesr	man		B. Jacob	os
	(ft)					SAMPL			<u></u>		
(feet)	DESCRIPTION	(WELL		<u> </u>			<u><u> </u></u>	9	REMARKS	
			LOG			ا ہے ۔	0. V. A.	6 T			
		i		No.	Type	Blow	(ppm)	Drilling Rate (Time)			
	5" Asphalt Cover.					<u> </u>					
5	Damp, reddish brown, SILTY fine grained (SP), with some CLAY and GRAVEL. (logged from cuttings only)							1330			
	Damp, yellowish brown, SILTY fine grained (SM—SP).	JANU									
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5‡	•	1	-	1	XI		40	1400			
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ł		}									
Ŧ		}	-								
‡	Damp, medium gray, CLAYEY SILT (ML),			_	Ц				_		
0‡	fine grained SAND, brown oily staining in tube #4.	1	-	2	X	,	500	1420	Strong	odor.	
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‡		1		[
_‡		1		3	М		550	1450	Strong	odor	
5 -		-	ŀ	د ا	Δ		J 330	1450	Strong	0001.	
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+		-	<u> </u>	j							
Ī			ł		L]		,		
٥			Ī	4	V		550	1515	Strong	odor.	
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İ			‡	1			1				
Ŧ		;	Ł	i							
7			Ţ			}	}				
‡	Very damp (product), brownish gray, SAN	YDY :	‡		<u></u>	<u> </u>					
5‡	SILŤ to SILTŸ SAND (SM), free product o tubes.	วที -	‡	5	X		+1000	1535	Strong	odor.	
ł	(ubes.	•	t	}	1	1					
Ţ		•	1]							
	0010146 41000457 00146411		t	<u> </u>	L		<u> </u>	<u> </u>	<u> </u>		T
ro	ject: DOUGLAS AIRCRAFT COMPANY			10)G	OF	BORI	NG	B - 4		Fig
	ject No.: 418639										B-9-

DEPTH (feet)	DESCRIPTION	WELL LOG	ó	Туре	Blow Count	0.V.A. (ppm)	Drilling Rate (T.)	REMARKS
40-	Damp, gray, CLAYEY SILT (ML). on tubes.	+	6	X	N/A	700	1550	Strong odor.
45	•	+	7	X	11	400	1620	Strong odor.
50	Damp, brown, SILTY fine SAND (SM-SP), micaceous.	+	8	X	11	400	1645	Strong odor.
55	•	† + + + + +	9	X	11	+1000	1710	~ .
60		+	10	X	11	100	1750	Slight to moderate odor.
65	Bottom of Boring at 60.5 feet.							Note: Angle drilled at 26. No blow counts taken due to angle drilling.
+		+						
70		+ + + + + + + + + + + + + + + + + + + +						
75		+ + + + + + + + + + + + + + + + + + + +						
80		+						
	ject: DOUGLAS AIRCRAFT COMPANY ject No.: 41863B	CONT.	. LC)G	OF	BORI		B-4 Fig. B-9-2

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APPENDIX C

WATER AND SOIL ANALYTICAL RESULTS WITH CHAIN-OF-CUSTODY FORMS

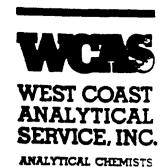
(ABC/DAPPA)

April 2, 1987

WOODWARD-CLYDE 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn: Allistair Callendar

JOB NO. 5557



LABORATORY REPORT

Samples: One (1) water sample

Date Received: 3-27-87 Purchase Order No: 41863B

The sample was analyzed for volatile organic compounds by GCMS according to EPA method 624. The results are reported in the following Organics Analysis Data Results sheets.

Page 1 of 1

Michael Shelton

Senior Chemist

D.J. Northington, Ph.D. Technical Director

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 213/948-2225

CLIENT: WOODWARD-CLYDE SAMPLE: MW-1(41)A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 03/27/87 GCMS FILENAME: 5557V3 LEVEL: LOW MATRIX: WATER DATE PREPARED: 04/01/87 04/01/87 DATE ANALYZED:

V0A280 STANDARD ID: INSTRUMENT ID: 5101

SAMPLE AMOUNT: 100UL

CAS #	COMPOUND		UG/L(PPB)	DETECTION LIMIT
	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	82 22 22 2	:::::::::::::::::::::::::::::::::::::::	12244242
74-87-3	CHLOROMETHANE		ND	300.
74-83-9	BROMOMETHANE		ND	300.
75-01-4	VINYL CHLORIDE		ND	300.
75-00-3	CHLOROETHANE		ND	300.
75-09-2	METHYLENE CHLORIDE		ND	500
67-64-1	ACETONE		ND	50 0.
107-02-8	ACROLEIN		ND	500.
107-13-1	ACRYLONITRILE	•	ND	5 00.
75-15-0	CARBON DISULFIDE		NI	5 0.
75-35-4	1, 1-DICHLOROETHENE		2800.	5 0.
75-34-3	1,1-DICHLOROETHANE		NE	50 .
156-60-5	TRANS-1, 2-DICHLORDETHENE		ND	50
109-99-9	TETRAHYDROFURAN		ND	5 0.
75-69-4	TRICHLOROFLUOROMETHANE		NE	50
76-13-1	FREON-TF		ND	5 0.
106-93-4	ETHYLENE DIBROMIDE		ND	5 0.
123-91-1	1,4-DIOXANE		ND	5 0.
96-12-8	1, 2-DIBROMO-3-CHLOROPROPANE		ND	50
67-66-3	CHLOROFORM		ND	50
107-06-2	1,2-DICHLOROETHANE		ND	5 0.
78-93-3	2-BUTANONE		NE	501
71-55-6	1, 1, 1-TRICHLORDETHANE		30 0.	5 0.
16-23-5	CARBON TETRACHLORIDE		ND	5 0.
108-05-4	VINYL ACETATE		ND	300
75-27-4	BROMODICHLOROMETHANE		ND	5G.
79-34-5	1, 1, 2, 2-TETRACHLOROETHANE		ND	50
78-8 7-5	1,2-DICHLOROPROPANE		ND	50
10061-02-6	TRANS-1, 3-DICHLOROPROPENE		NE	50
79-01-6	TRICHLORDETHENE		4600.	5Q.
124-48-1	DIBROMOCHLOROMETHANE		ND	50
79-00-5	1, 1, 2-TRICHLOROETHANE		NL	5 0.
71-43-2	BENZENE		85	50
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	50
110-75-8	2-CHLOROETHYLVINYL ETHER		NΞ	500.
75-25-2	BROMOFORM		ND	5 0.
119-78-6	2-HEXANDNE		ND	300
108-10-1	4-METHYL-2-PENTANGNE		NE	3 00
127-18-4	TETRACHLORGETHENE		ND	51
108-88-3	TOLUENE		ND	50.

CLIENT: WOODWARD-CLYDE

SAMPLE: MW-1(41)A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

5557V3

ND

50

DATE RECEIVED: 03/27/87 GCMS FILENAME:

LEVEL: LOW MATRIX: WATER
DATE PREPARED: 04/01/87 DATE ANALYZED: 04/01/

1, 2, 4-TRICHLOROBENZENE

DATE PREPARED: 04/01/87 DATE ANALYZED: 04/01/87 STANDARD ID: VDA280 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 100UL

120-82-1

CAS #	COMPOUND	CONC: UG/L(PPI	DETECTION B) LIMIT
22222222	28885228555552888555555288888888888	: 2252 22 52 22 22 22 25 25 25 25 25 25 2	
108-90-7	CHLOROBENZENE	N'	D 50
100-41-4	ETHYLBENZENE	N'	5 0.
100-42-5	STYRENE	N	D 50.
95-47-6	TOTAL XYLENES	N	D 50.
108-41-8	M-CHLOROTOLUENE	N	D 50
95-50-1	1,2-DICHLOROBENZENE	N	D 50
541-73-1	1,3-DICHLOROBENZENE	N	D 50.
106-46-7	1,4-DICHLOROBENZENE	N	D 50.

CLIENT: WOODWARD-CLYDE

SAMPLE: MW-1(41)A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/L(PPB)

1 NONE FOUND

VOA

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

Woodward-Clyde Consultants SHIPMENT NO .:___ CHAIN OF CUSTODY RECORD PAGE__ DATE 3 127 87 brance PROJECT NAME:_ 41863R PROJECT NO .: __ Type of Preservation Type of Sample Location Sample Number Type of Container Analysis Required* Material Method Temp Chemical 40 al Vial Luter Grab .. LI " u 16 Sampler's Signature: Total Number of Samples Shipped: 5 Relinquished By: Bu Received By: Date 327/8 Signature_ Signature_ Jacobs Printed Name ___ Michael Shelton Printed Name, T:me Company____ NOAS Company___ 5:42 Reason__ Analysis Date Relinquished By: Received By: Signature_ Signature_ Printed Name_ Printed Name_ Time Company___ Company___ Reason_ Date Received By: Relinquished By: Signature_ Signature_ Printed Name___ Printed Name__ Time Company__ Company_ Reason_ Received By: Date Relinquished By: Signature_ Signature_ Printed Name_ Printed Name_ Time Company___ Company___ Reason _

* Note - This does not constitute authorization to proceed with analysis

Special Shipment / Handling / Storage Requirements:

LA-OR-0163-421

WOODWARD-CLYDE 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn: Allistair Callendar

JOB NO. 5677



ANALYTICAL CHEMISTS

LABORATORY REPORT

Samples: Seven (7) water samples

Date Received: 4-13-87 Purchase Order No: 41863B

Three of the samples were analyzed for volatile organic compounds by GCMS according to EPA method 624. The results are reported in the following Organics Analysis Data Results Sheets.

Page 1 of 1

Michael Shelton

Senior Chemist

D.J. Northington, Ph.D. Technical Director

CLIENT: WOODWARD CLYDE

SAMPLE: MW-1, A.

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED:

04/13/87

OCMS FILENAME:

567772

LEVEL:

. . .

LOW

MATRIX:

WATER

DATE PREPARED:

04/15/87

DATE ANALYZED:

04/15/87

STANDARD ID:

VDA457

INSTRUMENT ID: =5100

SAMPLE AMOUNT:

100UL

				DETECTION
CAS #	COMPOUND	CONC:	UG/L(PPB)	LIMIT
	******************			********
74-87-3	CHLOROMETHANE		ND	3 00.
74-83-9	BROMOMETHANE		ND	30 0.
75-01-4	VINYL CHLORIDE		ND	300 .
75-0 0-3	CHLOROETHANE		ND	3 00.
75-09-2	METHYLENE CHLORIDE		ND	50 0.
67-64-1	ACETONE		ND	5 00.
107-02-B	ACROLEIN		ND	5 00.
107-13-1	ACRYLONITRILE		ND	50 0.
75-15-0	CARBON DISULFIDE		ND	50 .
75-35-4	1,1-DICHLOROETHENE		370 0.	50 .
75-34-3	1,1-DICHLOROETHANE		ND	50 .
156-60-5	TRANS-1, 2-DICHLORDETHENE		ND	5 0.
109-99-9	TETRAHYDROFURAN		ND	5 0.
75-69-4	TRICHLOROFLUOROMETHANE		ND	50 .
76-13-1	FREON-TF		ND	5 0.
106-93-4	ETHYLENE DIBROMIDE		ND	50 .
123-91-1	1,4-DIOXANE		ND	50 .
96-12-B	1.2-DIBROMO-3-CHLOROPROPANE		ND	50 .
67-66-3	CHLOROFORM		ND	50 .
107-06-2	1,2-DICHLORGETHANE		ND	50 .
78-9 3-3	2-BUTANONE		ND	5 00.
71-55-6	1,1,1-TRICHLORDETHANE		2 60.	50 .
16-23-5	CARBON TETRACHLORIDE		ND	50 .
108-05-4	VINYL ACETATE		ND	3 00.
75-27-4	BROMODICHLOROMETHANE		ND	50 .
79-34-5	1, 1, 2, 2-TETRACHLORDETHANE		ND	5 0.
78- 87-5	1.2-DICHLOROPROPANE		ND	5 0.
10061-02-6	TRANS-1, 3-DICHLOROPROPENE		ND	5 0.
79-01-6	TRICHLOROETHENE		5 500.	50 .
124-48-1	CHLORODIBROMOMETHANE		ND	50 .
79-00-5	1,1,2-TRICHLOROETHANE		ND	50 .
71-43-2	BENZENE		110.	50 .
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	5 0.
110-75-8	2-CHLOROETHYLVINYLETHER		ND	500 .
75-25-2	BROMOFORM		ND	5 0.
119-78-6	2-HEXANONE		. ND	300 .
108-10-1	4-METHYL-2-PENTANONE		ND	300.
127-18-4	TETRACHLOROETHENE		ND	50 .
108-88-3	TOLUENE		ND	5 0.

CLIENT: WOODWARD CLYDE

SAMPLE: MW-1.A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 04/13/87 QCMS FILENAME: 5677V2 LEVEL: LOW MATRIX: WATER

LEVEL: LOW MATRIX: WATER
DATE PREPARED: 04/15/87 DATE ANALYZED: 04/15/87

STANDARD ID: VDA457 INSTRUMENT ID: 5100

SAMPLE AMOUNT: 100UL

CAS #	COMPOUND	CONC:	UG/L(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	5 0.
100-41-4	ETHYLBENZENE		ND	5 0.
100-42-5	STYRENE		ND	5 0.
95-47-6	TOTAL XYLENES		ND	5 0.
108-41-8	M-CHLOROTOLUENE		ND	50 .
541-73-1	1,3-DICHLOROBENZENE	•	ND	50
106-46-7	1,4-DICHLOROBENZENE		ND	50 .
95-50-1	1,2-DICHLOROBENZENE		ND	50 .
120-82-1	1,2,4-TRICHLOROBENZENE		ND	50 .

CLIENT: WOODWARD CLYDE

SAMPLE: MW-1, A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION

UG/L(PPB)

1 NONE FOUND

VOA

CLIENT: WOODWARD CLYDE

SAMPLE: MW-1, B .

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 04/13/87 GCMS FILENAME: 5677V3
LEVEL: LOW MATRIX: WATER DATE PREPARED: 04/15/87 DATE ANALYZED: 04/15/87

STANDARD ID: VOA457 INSTRUMENT ID: 5100

SAMPLE AMOUNT: 100UL

			DETECTION
CAS #	COMPOUND	CONC: UG/L(PPB)	LIMIT
	18884847774447887844446£1888####		
74-87-3	CHLOROMETHANE	ND	30 0.
74-83-9	BROMOMETHANE	ND	3 00.
75-01-4	VINYL CHLORIDE	ND	300 .
75-00-3	CHLOROETHANE	ND	300 .
75-09-2	METHYLENE CHLORIDE	ND	5 00.
67-64-1	ACETONE	ND	500.
107-02-8	ACROLEIN	ND	500 .
107-13-1	ACRYLONITRILE	ND	5 00.
75-15-0	CARBON DISULFIDE	ND	5 0.
75-35-4	1,1-DICHLOROETHENE	25 00.	50 .
75-34-3	1,1-DICHLOROETHANE	ND	5 0.
156-60-5	TRANS-1.2-DICHLOROETHENE	ND	50 .
109-99-9	TETRAHYDROFURAN	ND	5 0.
75-69-4	TRICHLOROFLUOROMETHANE	ND	50 .
76-13-1	FREON-TF	ND	5 0.
106-93-4	ETHYLENE DIBROMIDE	ND	50 .
123-91-1	1,4-DIOXANE	ND	5 0.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	ND	5 0.
67-66-3	CHLOROFORM	ND	5 0.
107-06-2	1.2-DICHLOROETHANE	ND	5 0.
78-93-3	2-BUTANONE	ND	500 .
71-55-6	1,1,1-TRICHLOROETHANE	120.	50 .
16-23-5	CARBON TETRACHLORIDE	ND	50 .
108-05-4	VINYL ACETATE	ND	300 .
75-27-4	BROMODICHLOROMETHANE	ND	50 .
79-34-5	1, 1, 2, 2-TETRACHLOROETHANE	ND	5 0.
78-87-5	1,2-DICHLOROPROPANE	ND	50 .
10061-02-6	TRANS-1, 3-DICHLOROPROPENE	ND	50 .
79-01-6	TRICHLOROETHENE	3600 .	50 .
124-48-1	CHLORODIBROMOMETHANE	ND	50 .
79-00-5	1, 1, 2-TRICHLOROETHANE	ND	50 .
71-43-2	BENZENE	ND	5 0.
10061-01-5	CIS-1,3-DICHLOROPROPENE	ND	50 .
110-75-8	2-CHLOROETHYLVINYLETHER	ND	500 .
75-25-2	BROMOFORM	ND	5 0.
119-78-6	2-HEXANDNE	ND	300.
108-10-1	4-METHYL-2-PENTANONE	ND	3 00.
127-18-4	TETRACHLOROETHENE	ND	5 0.
108-88-3	TOLUENE	ND	5 0.

CLIENT: WOODWARD CLYDE

MW-1, B-SAMPLE:

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 04/13/87 QCMS FILENAME:

5677V3

LEVEL:

LDW

MATRIX: 4.4.

HATER

DATE PREPARED: STANDARD ID:

04/15/87

DATE ANALYZED:

04/15/B7

V0A457

INSTRUMENT ID: 5100

SAMPLE AMOUNT: 100UL

CAS #	COMPOUND	CONC:	UG/L(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	50.
100-41-4	ETHYLBENZENE		ND	5 0.
100-42-5	STYRENE		ND	5 0.
95-47-6	TOTAL XYLENES		ND	5 0.
108-41-8	M-CHLOROTOLUENE		ND	5 0.
541-73-1	1.3-DICHLOROBENZENE		ND	5 0.
106-46-7	1,4-DICHLOROBENZENE		ND	50 .
95-50-1	1,2-DICHLOROBENZENE		ND	50 .
120-82-1	1, 2, 4-TRICHLOROBENZENE		ND	5 0.

CLIENT: WOODWARD CLYDE

SAMPLE: MW-1, B

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION

UG/L(PPB)

1 NONE FOUND

VDA

CLIENT: WOODWARD CLYDE

SAMPLE: TRIP BLANK

ANALYSIS TYPE: EPA METHOD 8240 (624)

DRGANICS ANALYSIS DATA RESULTS

DATE RECEIVED:

04/13/87

OCMS FILENAME:

567744

LEVEL:

LOW

MATRIX:

WATER

DATE PREPARED:

04/15/87

DATE ANALYZED:

04/15/87

STANDARD ID:

VDA457

INSTRUMENT ID:

5100

SAMPLE AMOUNT:

5. DML

DETECTION

CAS #	COMPOUND	CONC:	UG/L(PPB)	LIMIT
74-87-3	CHLOROMETHANE		ND	5.
74-83-9	BROMOMETHANE		ND	5 .
75-01-4	VINYL CHLORIDE		ND	5 .
75-00-3	CHLORDETHANE		ND	5 .
75-09-2	METHYLENE CHLORIDE		ND	10.
67-64-1	ACETONE		ND	10.
107-02-8	ACROLEIN		ND	10.
107-13-1	ACRYLONITRILE		ND	10.
75-15-0	CARBON DISULFIDE		ND	1.
75-35-4	1,1-DICHLORDETHENE		ND	1.
75-34-3	1,1-DICHLORDETHANE		ND	1.
156-60-5	TRANS-1, 2-DICHLORDETHENE		ND	1.
109-99-9	TETRAHYDROFURAN		ND	1.
75-69-4	TRICHLOROFLUOROMETHANE		ND	1.
76-13-1	FREON-TF		ND	1.
106-93-4	ETHYLENE DIBROMIDE		ND	1.
123-91-1	1,4-DIOXANE		ND	1.
96-12-B	1,2-DIBROMO-3-CHLOROPROPANE		ND	1.
67 - 66-3	CHLOROFORM		ND	1.
107-06-2	1,2-DICHLOROETHANE		ND	1 .
78-93-3	2-BUTANONE		ND	10.
71-55-6	1, 1, 1-TRICHLOROETHANE		ND	1.
16-23-5	CARBON TETRACHLORIDE		ND	1.
108-05-4	VINYL ACETATE		ND	5 .
75-27-4	BROMODICHLOROMETHANE		ND	1.
79-34-5	1, 1, 2, 2-TETRACHLORDETHANE		ND	1.
78-87-5	1,2-DICHLOROPROPANE	·	ND	1.
10061-02-6	TRANS-1, 3-DICHLOROPROPENE		ND	1.
79-01-6	TRICHLOROETHENE		ND	1.
124-48-1	CHLORODIBROMOMETHANE		ND	1.
79-00-5	1, 1, 2-TRICHLORDETHANE		ND	1.
71-43-2	BENZENE		ND	1.
10061-01-5	CIS-1, 3-DICHLOROPROPENE		ND	1.
110-75-8	2-CHLOROETHYLVINYLETHER		ND	10.
75-25-2	BROMOFORM		ND	1. 5.
119-78-6	2-HEXANONE		ND	5. 5.
108-10-1	4-METHYL-2-PENTANONE		ND	
127-18-4	TETRACHLOROETHENE		ND	1. 1.
108-88-3	TOLUÉNE		ND	.

CLIENT: WOODWARD CLYDE

SAMPLE: TRIP BLANK

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 04/13/87

GCMS FILENAME: 5677V4

LEVEL: LOW MATRIX:

WATER 04/15/87

DATE PREPARED: 04/15/87
STANDARD ID: V0A457

DATE ANALYZED: 04/15
INSTRUMENT ID: 5100

SAMPLE AMOUNT: 5. DML

CAS .	COMPOUND	CONC: UG/L(PPE	DETECTION) LIMIT
108-90-7	CHLOROBENZENE	N	1
100-41-4	ETHYLBENZENE	NI	= -
100-42-5	STYRENE	NI	
95-47-6	TOTAL XYLENES	NI	1.
108-41-8	M-CHLOROTOLUENE	NI	1.
541-73-1	1.3-DICHLOROBENZENE	NI	1.
106-46-7	1,4-DICHLOROBENZENE	NI	1.
95-50-1	1,2-DICHLOROBENZENE	NI	1.
120-82-1	1, 2, 4-TRICHLOROBENZENE	NI	1.

- 44 Cat Ca

POE OC DOLLOS

CLIENT: WOODWARD CLYDE

SAMPLE: TRIP BLANK

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION

UG/L(PPB)

1 NONE FOUND

VOA

Woodward-Clyde Consultants



1		•
PAGE	OF '	l

CHAIN OF CUSTODY RECORD

PROJECT	NAME:	Dung	195	 Porrance	
		पाद्ध			

Sample Number	Location	Type of		Type of Container		of Preservation	Analysis Required*
Mars (WA	 	Material (1) 4-CC	Method Birled	No Au	Temp	Chemical	8240
MM-1(A1)H	 		Surea	40 ml Viel	Car.	 	8240
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<u>,, E</u>	}	<u> </u>		500 nd Amber	T	 	SAMPLE)
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TMI Blank		- 11		40 ml Vial	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		8240
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Total Number of	Samples Sh	ipped: 7£	Sample	's Signature:	Razie	12 Later	
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Reason			·		·		4:5
Relinquished By:				Received By:			Date
Signature				Signature			
Printed Name				Printed Name_			Time
Company				Company			
ReasonRelinquished By:				Received By:			Date
Signature				Signature			/ / /
Printed Name				Printed Name_			Time
Company				Company			ymir
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Relinquished By:				Received By:			Date
Signature							
Printed_Name							
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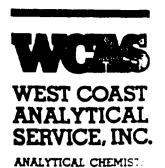
Note - This does not constitute authorization to proceed with analysis

November 11, 1987

WOODWARD-CLYDE 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn: Brian Jacobs

JOB NO. 7621



LABORATORY REPORT

Samples Received: Four (4) water samples in duplicate

Date Received: 11-2-87

Purchase Order No: Proj: 87418630-1000/Douglas

The samples were analyzed as follows:

Samples Analyzed Analysis Results

Three waters Volatile Organics

by EPA 624 Data Sheets

Three waters Fuel Hydrocarbons by

modified EPA 8015 Table I

TABLE I

Parts Per Million

Sample No.	Gasoline	Diesel <u>Fuel</u>	Kerosene	Mineral Spirits
MW-2B	ND	ND	ND	ND
MW-3B	ND	ND	ND	ND
MW-4B	ND	ND	ND	ND
Detection Limit	t 2	2	2	2

ND - Not Detected

Date Analyzed: 11-5-87

Page 1 of 1

Michael Shelton

Senior Chemist

D.J. Northington, Ph.D.

Technical Director

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-2A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/02/87 GCMS FILENAME: 7621V1 LEVEL: WATER LOW MATRIX: DATE PREPARED: 11/11/87 DATE ANALYZED: 11/11/87 STANDARD ID: VOA608 INSTRUMENT ID: 5100

SAMPLE AMOUNT: 5ML

CAS #	COMPOUND	CONC:	UG/L(PPB)	DETECTION LIMIT
		222222	*********	:#####################################
74-87-3	CHLOROMETHANE		ND	5.
74-83-9	BROMOMETHANE		ND	5.
75-01-4	VINYL CHLORIDE		ND	5.
75-00-3	CHLOROETHANE		ND	5.
75-09-2	METHYLENE CHLORIDE		ND	10
67-64-1	ACETONE		ND	10.
107-02-8	ACROLEIN		ND	10.
107-13-1	ACRYLONITRILE		ND	10.
75-15-0	CARBON DISULFIDE		. ND	1.
75-35-4	1,1-DICHLOROETHENE		5.	1.
75-34-3	1,1-DICHLOROETHANE		ND	1.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	1.
109-99-9	TETRAHYDROFURAN		ND	1.
75-69-4	TRICHLOROFLUOROMETHANE		ND	1.
76-13-1	Freon-TF		ND	1.
106-93-4	ETHYLENE DIBROMIDE		ND	1.
123-91-1	1,4-DIOXANE		ND	1.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	1.
67-66-3	CHLOROFORM		ND	1.
107-06-2	1,2-DICHLOROETHANE	,	ND	1.
78-93-3	2-BUTANONE		ND	10.
71-55-6	1,1,1-TRICHLOROETHANE		5.	1.
16-23-5	CARBON TETRACHLORIDE		ND	1.
108-05-4	VINYL ACETATE		ND	5.
75-27-4	BROMODICHLOROMETHANE		ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	1.
78-87-5	1,2-DICHLOROPROPANE		ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	1.
79-01-6	TRICHLOROETHENE	•	14.	1.
124-48-1	CHLORODIBROMOMETHANE		ND	1.
79-00-5	1,1,2-TRICHLOROETHANE		ND	1.
71-43-2	BENZENE		ND	. 1.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	1.
110-75-8	2-CHLOROETHYLVINYLETHER		ND	10.
75-25-2	BROMOFORM		ND	1.
119-78-6	2-HEXANONE		ND	5.
108-10-1	4-METHYL-2-PENTANONE		ND	5. ,
127-18-4	TETRACHLOROETHENE		ND	1.
108-88-3	TOLUENE		6.	1.

POE OC COLLEGE

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-2A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/02/87 GCMS FILENAME: 7621V1
LEVEL: LOW MATRIX: WATER
DATE PREPARED: 11/11/87 DATE ANALYZED: 11/11/87
STANDARD ID: VOA608 INSTRUMENT ID: 5100

STANDARD ID: VOA6
SAMPLE AMOUNT: 5ML

CAS #	COMPOUND	CONC: UG/L(PPB	DETECTION LIMIT
108-90-7	CHLOROBENZENE	ND	1
100-41-4	ETHYLBENZENE	NI	
100-42-5	STYRENE	NI	1.
95-47-6	TOTAL XYLENES	NI	1.
108-41-8	M-CHLOROTOLUENE	NI	1.
541-73-1	1,3-DICHLOROBENZENE	NI	1.
106-46-7	1,4-DICHLOROBENZENE	NI	1.
95-50-1	1,2-DICHLOROBENZENE	NI	1.

SITE:

CLIENT: WOODWARD-CLYDE DOUGLAS AIRCRAFT

SAMPLE: MW-2A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/L(PPB)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT SAMPLE: MW-3A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/02/87 GCMS FILENAME: 7621V3 LOW LEVEL: MATRIX: WATER DATE PREPARED: 11/11/87 DATE ANALYZED: 11/11/87 5100 STANDARD ID: VOA608 INSTRUMENT ID:

SAMPLE AMOUNT: 5UL

CAS #	COMPOUND	CONC:	UG/ML (PPM)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	5.
74-83-9	BROMOMETHANE		ND	5.
75-01-4	VINYL CHLORIDE		ND	5.
75-00-3	CHLOROETHANE		ND	5.
75-09-2	METHYLENE CHLORIDE		ND	10.
67-64-1	ACETONE		ND	10.
107-02-8	ACROLEIN		ND	10.
107-13-1	ACRYLONITRILE		ND	10.
75-15-0	CARBON DISULFIDE	•	ND	1.
75-35-4	1,1-DICHLOROETHENE		38.	1.
75-34-3	1,1-DICHLOROETHANE		ND	1.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	1.
109-99-9	TETRAHYDROFURAN		ND	1.
75-69-4	TRICHLOROFLUOROMETHANE		ND	1.
76-13-1	FREON-TF		ND	1.
106-93-4	ETHYLENE DIBROMIDE		ND	1.
123-91-1	1,4-DIOXANE		ND	1.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	1.
67-66-3	CHLOROFORM		ND	1.
107-06-2	1,2-DICHLOROETHANE		ND	1.
78-93-3	2-BUTANONE		ND	10.
71-55-6	1,1,1-TRICHLOROETHANE		110.	1.
16-23-5	CARBON TETRACHLORIDE	•	ND	1.
108-05-4	VINYL ACETATE		ND	5.
75-27-4	BROMODICHLOROMETHANE		ND	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	1.
78-87-5	1,2-DICHLOROPROPANE		ND	1.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	1.
79-01-6	TRICHLOROETHENE		10.	1.
124-48-1	CHLORODIBROMOMETHANE		ND	1.
79-00-5	1,1,2-TRICHLOROETHANE		ND	1.
71-43-2	BENZENE		ND	1.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	1.
110-75-8	2-CHLOROETHYLVINYLETHER		ND	10.
75-25-2	BROMOFORM		ND	1.
119-78-6	2-HEXANONE		ND	5.
108-10-1	4-METHYL-2-PENTANONE		54.	5.
127-18-4	TETRACHLOROETHENE		ND	1.
108-88-3	TOLUENE		80.	1.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

11/02/87 DATE RECEIVED: GCMS FILENAME: 7621V3 LOW LEVEL: MATRIX: WATER DATE PREPARED: 11/11/87 DATE ANALYZED: 11/11/87 STANDARD ID: **VOA608** INSTRUMENT ID: 5100

SAMPLE AMOUNT: 5UL

CAS #	COMPOUND	CONC:	UG/ML(PPM)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	1.
100-41-4	ETHYLBENZENE		ND	1.
100-42-5	STYRENE		ND	1.
95-47-6	TOTAL XYLENES		ND	1.
108-41-8	M-CHLOROTOLUENE		ND	1.
541-73-1	1,3-DICHLOROBENZENE		ND	1.
106-46-7	1,4-DICHLOROBENZENE		ND	1.
95-50-1	1,2-DICHLOROBENZENE		ND	1.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/ML(PPM)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-4A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

11/02/87 GCMS FILENAME: DATE RECEIVED: 7621V2 LEVEL: LOW MATRIX: WATER DATE PREPARED: 11/11/87 DATE ANALYZED: 11/11/87 STANDARD ID: **VOA608** INSTRUMENT ID: 5100

SAMPLE AMOUNT: 5ML

			DETECTION
CAS #	COMPOUND	CONC: UG/L(PPB) LIMIT
74-87-3	CHLOROMETHANE	ereszerszerekee ND	
74-83-9	BROMOMETHANE	ND	
75-01-4	VINYL CHLORIDE	ND	
75-00-3	CHLOROETHANE	ND	
75-09-2	METHYLENE CHLORIDE	ND	
67-64-1	ACETONE	ND	10.
107-02-8	ACROLEIN	ND	10.
107-13-1	ACRYLONITRILE	NE	10.
75-15-0	CARBON DISULFIDE	NE	1.
75-35-4	1,1-DICHLOROETHENE	360.	1.
75-34-3	1,1-DICHLOROETHANE	NE	1.
156-60-5	TRANS-1, 2-DICHLOROETHENE	2.	1.
109-99-9	TETRAHYDROFURAN	NI	1.
75-69-4	TRICHLOROFLUOROMETHANE	N	1.
76-13-1	FREON-TF	NI	1.
106-93-4	ETHYLENE DIBROMIDE	NI	1.
123-91-1	1,4-DIOXANE	NI	1.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	NI	1.
67-66-3	CHLOROFORM	2.	1.
107-06-2	1,2-DICHLOROETHANE	NI	1.
78-93-3	2-BUTANONE	NI	10.
71-55-6	1,1,1-TRICHLOROETHANE	14.	1.
16-23-5	CARBON TETRACHLORIDE	N	1.
108-05-4	VINYL ACETATE	N) · 5.
75-27-4	BROMODICHLOROMETHANE	N	1.
79-34-5	1,1,2,2-TETRACHLOROETHANE	N:	1.
78-87-5	1,2-DICHLOROPROPANE	N:	- -
10061-02-6	TRANS-1,3-DICHLOROPROPENE	N	
79-01-6	TRICHLOROETHENE	700.	1.
124-48-1	CHLORODIBROMOMETHANE	N	- -
79-00-5	1,1,2-TRICHLOROETHANE	N	
71-43-2	BENZENE	N	
10061-01-5	CIS-1,3-DICHLOROPROPENE	N	
110-75-8	2-CHLOROETHYLVINYLETHER	N	—
75-25-2	BROMOFORM	N	-
119-78-6	2-HEXANONE	N	_
108-10-1	4-METHYL-2-PENTANONE	N	_
127-18-4	TETRACHLOROETHENE	N	D 1.
108-88-3	TOLUENE	N	D 1.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-4A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/02/87 GCMS FILENAME: 7621V2 LOW LEVEL: MATRIX: WATER DATE PREPARED: 11/11/87 11/11/87 DATE ANALYZED: STANDARD ID: **VOA608** INSTRUMENT ID: 5100

SAMPLE AMOUNT: 5ML

CAS #	COMPOUND	CONC: UG/L(PP)	DETECTION B) LIMIT
			E 在 有 表 性 有 表 表 表 表 表 表 是 二
108-90-7	CHLOROBENZENE	N.	D 1.
100-41-4	ETHYLBENZENE	N	D 1.
100-42-5	STYRENE	· "	D 1.
95-47-6	TOTAL XYLENES	N	D 1.
108-41-8	M-CHLOROTOLUENE	N	D 1.
541-73-1	1,3-DICHLOROBENZENE	N	D 1.
106-46-7	1,4-DICHLOROBENZENE	N	D 1.
95-50-1	1.2-DICHLOROBENZENE	N	D 1.

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POF OC OCCUPA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-4A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION UG/L(PPB)

1 CIS-1,2-DICHLOROETHYLENE

VOA

10.

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

CHAIN OF CUSTODY RECORD PAGE OF DATE 1/2/87 PROJECT NO: 97/8620 - 1000 Sample Number Location Type of Sample Type of Contains Type of Preservation Analysis Required Type of Contains Type					lyde Consult			IENT NO.:,	
PROJECT No.: C7 (Second Second		•	C	HAIN OF	CUSTODY REC	ORD			
Sample Number Location Type of Sample Type of Container Temp Chemical Analysis Required* Temp Chemical SZYO Hold	•.	PR O (E/	CT NAME:	Pa	oc/AS		DATE	11 12	187
Sample Number Location Type of Sample Type of Container Type of Preservation Analysis Required Matural Method Met	•			•		1000	<u> </u>		*
Material Method NUJ - Z A (Sample Number				<u></u>	Type		Analysis	Required *
Total Number of Samples Shipped: Sampler's Signature: Note		Location	Mategal	Method		Temp			
MUS - 3 A MUS - 4 A MUS - 4 A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 3 R B A MUS - 4 A MUS		ļ	Witn	Bailer	blass Viel	TLEP	none		
Total Number of Samples Shipped: Sampler's Signature: All D-3R B/A		 					100		
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CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: WCC-1A

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ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: 776172 LOW LEVEL: MATRIX: WATER DATE PREPARED: DATE ANALYZED: 11/16/67 11/16/87 INSTRUMENT ID: 5101 STANDARD ID: V0A450

SAMPLE AMOUNT: 250UL

CAS #	COMPOUND		UG/L(PPB)	DETECTION LIMIT
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			•	
74-87-3	CHLOROMETHANE		ND	100.
74-83-9	BROMOMETHANE		ND	100.
75-01-4	VINYL CHLORIDE		ND	100.
7500-3	CHLORGETHANE		ND	100.
75-09-2	METHYLENE CHLORIDE		ND	200.
67-64-1	ACETONE		ND	200.
107-02-8	ACROLEIN		ND	200.
107-13-1	ACRYLONITRILE		ND	200.
75-15-0	CARBON DISULFIDE		ND	20.
75-35-4	1,1-DICHLORDETHENE		3000.	20.
75-34-3	1, 1-DICHLORDETHANE		23.	20.
156-60-5	TRANS-1, 2-DICHLORDETHENE		75. ·	20.
109-99-9	TETRAHYDROFURAN		ND	20.
75-69-4	TRICHLOROFLUOROMETHANE		ND	20.
76-13-1	FREON-TF		ND	20.
106-93-4	ETHYLENE DIBROMIDE		ND	20.
123-91-1	1,4-DIOXANE		ND	20.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	20.
67-66-3	CHLDROFORM		39.	20.
107-06-2	1,2-DICHLORGETHANE		ND	20.
78-93-3	2-BUTANONE		ND	200.
71-55-6	1,1,1-TRICHLORGETHANE		160. •	20.
16-23-5	CARBON TETRACHLORIDE		ND	20.
108-05-4	VINYL ACETATE		ND	100.
75-27-4	BROMODICHLOROMETHANE		ND	20.
79-34-5	1, 1, 2, 2-TETRACHLOROETHANE		ND	20 .
78-87-5	1,2-DICHLOROPROPANE		ND	20.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	20.
79-01-6	TRICHLOROETHENE		5200.	20.
124-48-1	DIBROMOCHLOROMETHANE		ND	20.
79-00-5	1, 1, 2-TRICHLOROETHANE		ND	20.
71-43-2	BENZENE		160. ·	20.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	20.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	200.
75-25-2	BROMOFORM		ND	20 .
119-78-6	2-HEXANONE		ND	100.
108-10-1	4-METHYL-2-PENTANONE		ND	100.
127-18-4	TETRACHLOROETHENE		ND	20.
108-88-3	TOLUENE		ND	20.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: WCC-1A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: 7761V2 LEVEL: LOW MATRIX: WATER

DATE PREPARED: 11/16/87 DATE ANALYZED: 11/16/87

STANDARD ID: VDA450 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 250UL

CAS #	COMPOUND	CONC: UG/L(PPB)	DETECTION LIMIT
		######################################		
108-90-7	CHLOROBENZENE		ND	20.
100-41-4	ETHYLBENZENE		ND	20.
100-42-5	STYRENE		ND	20.
75-47-6	TOTAL XYLENES		ND	20.
108-41-8	M-CHLOROTOLUENE		ND	20.
95-50-1	1,2-DICHLOROBENZENE		ND	20 .
541-73-1	1.3-DICHLOROBENZENE		ND	20.
106-46-7	1.4-DICHLOROBENZENE		ND	20.

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WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT SAMPLE: WCC-1A

1 CIS-1, 2-DICHLORGETHYLENE

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TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/L(PPB) VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: WCC-2A

ANALYSIS TYPE: EPA METHOD 8240 (624)

DRGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: 7761V4 LEVEL: LOW MATRIX: WATER DATE PREPARED: 11/16/87 DATE ANALYZED: 11/16/87 STANDARD ID: V0A450 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 5ML

CAS #	COMPOUND	CONC:	UG/L(PPB)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	5 .
74-83- 9	BROMOMETHANE		ND	5 .
75-01-4	VINYL CHLORIDE		ND	5.
7 5- 00-3	CHLOROETHANE		ND	5.
75-09-2	METHYLENE CHLORIDE		ND	10.
67-64-1	ACETONE		ND	10.
107-02-8	ACROLEIN		ND	10.
107-13-1	ACRYLONITRILE		ND	10.
75-15-0	CARBON DISULFIDE		ND	1.
75-35-4	1,1-DICHLOROETHENE		2.	1.
75-34-3	1.1-DICHLOROETHANE		ND	1.
156-60-5	TRANS-1, 2-DICHLOROETHENE		ND	1.
109-99-9	TETRAHYDROFURAN		ND	1.
75-69-4	TRICHLOROFLUDROMETHANE		ND	1.
76-13-1	FREON-TF		ND	1.
106-93-4	ETHYLENE DIBROMIDE		ND	1.
123-91-1	1,4-DIOXANE		ND	1.
96-12-B	1,2-DIBROMO-3-CHLOROPROPANE		ND	1.
67-66-3	CHLOROFORM		ND	1.
107-06-2	1,2-DICHLOROETHANE		ND	1.
78-93-3	2-BUTANONE		ND	10.
71-55-6	1, 1, 1-TRICHLORDETHANE		ND	1.
14-23-5	CARBON TETRACHLORIDE		ND	1.
108-05-4	VINYL ACETATE		ND	5.
75-27-4	BROMODICHLOROMETHANE		ND	<u>ī.</u>
79-34-5	1, 1, 2, 2-TETRACHLOROETHANE		ND	1.
78-87-5	1,2-DICHLOROPROPANE		ND	1.
10061-02-6	TRANS-1.3-DICHLOROPROPENE		ND	1.
79-01-6	TRICHLOROETHENE		4.	1.
124-48-1	DIBROMOCHLOROMETHANE		ND	1.
79-00-5	1, 1, 2-TRICHLORGETHANE		ND	1.
71-43-2	BENZENE		ND	1.
10061-01-5	CIS-1, 3-DICHLOROPROPENE		ND	1.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	10.
75-25-2	BROMOFORM		ND	1.
119-78-6	2-HEXANDNE		ND	5 .
108-10-1	4-METHYL-2-PENTANONE		ND	5.
127-18-4	TETRACHLOROETHENE		ND	1.
108-88-3	TOLUENE		1.	1.

WEST COAST ANALYTICAL SERVICE, INC.

CLIENT: WOODWARD-CLYDE DOUGLAS AIRCRAFT SITE:

SAMPLE: WCC-2A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: LEVEL: LOW

MATRIX: WATER DATE ANALYZED: 11/16/87

776144

DATE PREPARED: 11/16/87 INSTRUMENT ID: 5101 STANDARD ID: V0A450

SAMPLE AMOUNT: 5ML

CAS #	COMPOUND	 UG/L(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE	ND	1.
100-41-4	ETHYLBENZENE	ND	1.
100-42-5	STYRENE	ND	1.
95-47-6	TOTAL XYLENES	ND	1.
108-41-8	M-CHLOROTOLUENE	ND	1.
75-50-1	1,2-DICHLOROBENZENE	ND	1.
541-73-1	1.3-DICHLOROBENZENE	ND	1.
106-46-7	1,4-DICHLOROBENZENE	ND	1.

CLIENT: WOODWARD-CLYDE

SITE:

DOUGLAS AIRCRAFT

SAMPLE: WCC-2A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION

UÇ/L(PPB) 带着心体可含因30元式是对3元或是对3元或是对4元对自己的关键的是非常是是是有4元之的,但20元或是是对4元的的数据的对2元或是20元或是20元或是20元或是2 -

1 NONE FOUND

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CLIENT: WOODWARD-CLYDE DOUGLAS AIRCRAFT SITE:

SAMPLE: WCC-3A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: 776146 LEVEL: MEDIUM MATRIX: WATER DATE PREPARED: 11/17/87 DATE ANALYZED: 11/17/87 STANDARD ID: V0A451 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 5UL

CAS #	COMPOUND	 UG/ML(PPM)	DETECTION LIMIT
74-87-3	CHLOROMETHANE	ND	5 .
74-83-9	BROMOMETHANE	ND	5 .
75-01-4	VINYL CHLORIDE	ND	5 .
75-00-3	CHLOROETHANE	ND	5 . ્
75-09-2	METHYLENE CHLORIDE	ND	10.
67-64-1	ACETONE	ND	10.
107-02-8	ACROLEIN	ND	10.
107-13-1	ACRYLONITRILE	ND	10.
75-15-0	CARBON DISULFIDE	ND	1.
75-35-4	1,1-DICHLOROETHENE	88. ·	1.
75-34-3	1,1-DICHLOROETHANE	1.	1.
156-60-5	TRANS-1, 2-DICHLORGETHENE	1.	1.
109-99-9	TETRAHYDROFURAN	ND	1.
75-69-4	TRICHLOROFLUOROMETHANE	ND	1.
76-13-1	FREON-TF	ND	1.
106-93-4	ETHYLENE DIBROMIDE	ND	1.
123-91-1	1.4-DIDXANE	ND	1.
96-12-8	1.2-DIBROMO-3-CHLOROPROPANE	ND	1.
67-66-3	CHLOROFORM	ND	1.
107-06-2	1,2-DICHLOROETHANE	O. TR	1.
78-93-3	2-BUTANONE	5. TR	10.
71-55-6	1, 1, 1-TRICHLOROETHANE	54 .	1.
16-23-5	CARBON TETRACHLORIDE	מא .	1.
108-05-4	VINYL ACETATE	ND	5.
75-27-4	BROMODICHLOROMETHANE	ND	1.
79-34-5	1, 1, 2, 2-TETRACHLORGETHANE	ND	1.
78-87-5	1,2-DICHLOROPROPANE	ND	1.
10061-02-6	TRANS-1, 3-DICHLOROPROPENE	ND	1.
79-01-6	TRICHLOROETHENE	11.	1.
124-48-1	DIBROMOCHLOROMETHANE	ND	1.
79-00-5	1.1.2-TRICHLORGETHANE	ND	1.
71-43-2	BENZENE	ND	1.
10061-01-5	CIS-1, 3-DICHLOROPROPENE	ND	1.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	10.
75-25-2	BROMOFORM	ПП	1.
119-78-6	2-HEXANONE	ND	5 .
108-10-1	4-METHYL-2-PENTANONE	70. ·	5 .
127-18-4	TETRACHLORGETHENE	ND	1.
108-88-3	TOLUENE	140.	1.
		•	

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: WCC-3A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: 7761V6
LEVEL: MEDIUM MATRIX: WATER

DATE PREPARED: 11/17/87 DATE ANALYZED: 11/17/87 STANDARD ID: VDA451 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 5UL

CAS #	COMPOUND	DETECTION CONC: UG/ML(PPM) LIMIT
108-90-7	CHLOROBENZENE	ND 1.
100-41-4	ETHYLBENZENE	ND 1.
100-42-5	STYRENE	ND 1.
95-47-6	TOTAL XYLENES	ND 1.
108-41-8	M-CHLOROTOLUENE	ND 1.
95-50-1	1, 2-DICHLORDBENZENE	ND 1.
541-73-1	1,3-DICHLOROBENZENE	ND 1.
106-46-7	1,4-DICHLOROBENZENE	ND 1.

CLIENT: WOODWARD-CLYDE

SITE:

DOUGLAS AIRCRAFT

SAMPLE: WCC-3A

TENTATIVELY IDENTIFIED COMPOUNDS

프로플로 대본프로 독료 프로브속속 본본수 및 로마 보호본 분호 본 보호 및 경로 및 경로 및 등장자의 근 및 로마 프로프로 및 다고 그 후도 후 목도 보고 및 중로 또 모르는 기 등 등 등 등 등 등

COMPOUND NAME

FRACTION CONCENTRATION

UG/ML(PPM)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: WCC-4A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 11/13/87 GCMS FILENAME: 7761V8
LEVEL: LOW MATRIX: WATER
DATE PREPARED: 11/17/87 DATE ANALYZED: 11/17/87

STANDARD ID: VOA451 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 500UL

CAS #	COMPOUND		UG/L(PPB)	DETECTION LIMIT
685865524±1	13.0.完全的企业的企业的企业的企业的企业的企业的企业的企业的企业。 13.0.完全的企业的企业的企业的企业。	3	#### ##	:当办是30年21年6月6
74-87-3	CHLOROMETHANE		ND	50 .
74-83-9	BROMOMETHANE		ND	50 .
75-01-4	VINYL CHLORIDE		ND	5 0.
75-00-3	CHLORDETHANE		ND	50
75-09-2	METHYLENE CHLORIDE		ND	100.
67-64-1	ACETONE		ND	100.
107-02-8	ACROLEIN		MD	100.
107-13-1	ACRYLONITRILE		. ND	100.
75-15-0	CARBON DISULFIDE		ND	10.
75-35-4	1.1-DICHLOROETHENE		1200.	10.
75-34-3	1.1-DICHLOROETHANE		ND	10.
156-60-5	TRANS-1, 2-DICHLORDETHENE		ND	10.
109-99-9	TETRAHYDROFURAN		ND	10.
75-69-4	TRICHLOROFLUOROMETHANE		ND	10.
76-13-1	FREON-TF		ND	10.
106-93-4	ETHYLENE DIBROMIDE		ND	10.
123-91-1	1.4-DIOXANE		ND	10.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	10.
67-66-3	CHLOROFORM		ND	10.
107-06-2	1.2-DICHLORDETHANE		ND	10.
78-93-3	2-BUTANONE		DM	100.
71-55-6	1.1.1-TRICHLOROETHANE		35.	10.
16-23-5	CARBON TETRACHLORIDE		ND	10.
108-05-4	VINYL ACETATE		ND	5 0.
75-27-4	BROMODICHLOROMETHANE		ND	10.
79-34-5	1, 1, 2, 2-TETRACHLOROETHANE		ND	10.
78-87-5	1,2-DICHLOROPROPANE		ND	10.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	10.
79-01-6	TRICHLOROETHENE		690. 	10.
124-48-1	DIBROMOCHLOROMETHANE		ND	10.
79-00-5	1, 1, 2-TRICHLOROETHANE		ND	10.
71-43-2	BENZENE		ND	10.
10061-01-5	CIS-1, 3-DICHLOROPROPENE		ND	10.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	100.
75-25-2	BROMOFORM		ND	10. 50.
119-78-6	2-HEXANONE		ND AID	50. 50 .
108-10-1	4-METHYL-2-PENTANONE		ND	-
127-18-4	TETRACHLOROETHENE		ND	10.
108-88-3	TOLUENE		ND	10.

CLIENT: WOODWARD-CLYDE DOUGLAS AIRCRAFT SITE:

SAMPLE: WCC-4A

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: OCMS FILENAME: 776148 11/13/87 WATER LOW MATRIX: LEVEL: 11/17/87 DATE ANALYZED: DATE PREPARED: 11/17/87 INSTRUMENT ID: 5101

V0A451 STANDARD ID:

SAMPLE AMOUNT: 500UL

CAS #	COMPOUND	CONC:	UG/L(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	10.
100-41-4	ETHYLBÈNZEŅE		ND	10.
100-42-5	STYRENE		ND	10.
95-47-6	TOTAL XYLENES		ND	10
108-41-8	M-CHLOROTOLUENE		ND	10.
95-50-1	1.2-DICHLOROBENZENE		ND	10.
541-73-1	1,3-DICHLOROBENZENE		ND	10.
106-46-7	1,4-DICHLOROBENZENE		ND	10.

CLIENT: WOODWARD-CLYDE

SITE:

DOUGLAS AIRCRAFT

SAMPLE: WCC-4A

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION

CONCENTRATION

UC/L(PPB)

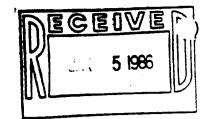
1 NONE FOUND

VDA

Data Reporting Gualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

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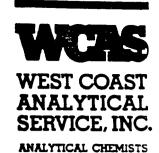


December 31, 1986

WOODWARD-CLYDE 203 No. Golden Circle Drive Santa Ana, CA 92705

Attn: Kevin Gibson

JOB NO. 4932



LABORATORY REPORT

Samples: Two (2) soil samples

Date Received: 12-29-86

Purchase Order No: Project 41863B

The samples were analyzed for total petroleum hydrocarbon content using EPA method 418.1. The results are listed below:

Parts Per Million

Sample No. Total

Total Petroleum Hydrocarbons

B2-2-3 at 5' B2-7-3 at 30' Detection Limit 5000 6000

10

Date Analyzed: 12-30-86

Page 1 of 1

Isabella Gundran Chemist D.J. Northington, Ph.D.
Technical Director

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 213/948-2225

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Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.

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January 9, 1987

WOODWARD-CLYDE 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn: Kevin Gibson

JOB NO. 4968



ANALYTICAL CHEMISTS

LABORATORY REPORT

Samples: Nineteen (19) soil samples

Date Received: 1-6-87 Purchase Order No: 41863B

Ten (10) samples were analyzed for total petroleum hydrocarbons

by EPA method 418.1. The results are reported below:

Parts Per Million

Sample.No.	Total Petroleum Hydrocarbons
2-7-4	14000
2-8-4	2000
2-9-4	2000
2-10-4	19000
3-1-4	2900
3-2-4	27
3-3-4	1200
3-4-4	4400
3-5-3	13000
3-6-3	4100
Detection Limit	10

Date Extracted: 1-8-87 Date Analyzed: 1-8-87

Page 1 of 1

Isabelle Gundran

Chemist.

D.J. Northington, Ph.D. Technical Director

Woodward-Clyde Consultants



CHAIN OF CUSTODY RECORD

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PROJECT	NO:	41863	T

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* Note — This does not constitute authorization to proceed with analysis

LA/OR-0183-42

June 5, 1987

WOODWARD-CLYDE 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn: Allistaire Callendar

JOB NO. 6039

Sample No.

JUN O 8 1287 WEST COAST WCC-SANIA ANALYTICAL SERVICE, INC.

ANALYTICAL CHEMISTS

LABORATORY REPORT

Samples: Seventeen (17) soil samples

Date Received: 5-27-87
Purchase Order No: 41863B

Nine (9) soil samples were analyzed for total petroleum hydrocarbon content using EPA Method 418.1. The results are on Table I.

Table I

Parts Per Million

Total Petroleum Hydrocarbon

B-4-1-2	ND
B-4-2-2	15000
B-4-3-2	44000
B-4-4-2	8200
B-4-5-2	28000
B-4-6-2	6000
B-4-7-2	1500
B-4-9-2	16000
B-4-10-2	ND
Detection Limit:	10

ND - Not Detected

Date Analyzed: 6-4-87

Page 1 of 1

Isabelle Gundran Analytical Chemist

D.J. Northington, Ph.D. Technical Director

Woodward-Clyde Consultants



CHAIN OF CUSTODY RECORD

SHIPMENT NO .:.. PAGE___OF__

DATE 5 1261 86 PROJECT NAME: DVGLAS ARCRAFT PROJECT NO .: 4186313 Type of Sample Type of Preservation Sample Number Location Analysis Required* Type of Container Material Method Temp Chemical B-41-2 BLASS TUBE -R-L Soil KE NONE BORN4 TO BE PROMISED 3-4-1-3 -BY ALLTARG ペーチー マーご CALENDAR (714) 835-688/ 0-4-2-3 4-3-3 4-4-2 6-4-10-Z Total Number of Samples Shipped: 17 Sampler's Signature: Received By: Relinquished By: Date Signature Ollow del 5/27/8 Signature_ Printed Name HOER GUASMIN Printed Name DELANDO HED WANDSTO Company LIDOLORO O. TOE CONCULTANTS Time Yde consultant Company Library 1: P.M FOR TRANSPORTING TO LABOURDE Reason. Received By: Margaret Relinquished By:
Signature Dlande Date <u> 5 127 87</u> Printed Name OR/ANDO Printed Name Time Company_ <u>1630</u> Reason Deliver Relinquished By: Received By: Date Signature_ Signature_ Printed Name_ Printed Name, Time Company_ Company_ Reason_ Received By: Date Relinquished By: Signature_ Signature_ Printed Name Printed Name_ Time Company_ Company_ Reason_ Special Shipment / Handling / Storage Requirements:

* Note - This does not constitute authorization to proceed with analysis

LA OR-0183-421

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-3-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V1
LEVEL: LOW MATRIX: SOIL
DATE PREPARED: 09/01/87 DATE ANALYZED: 09/01/87
STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G

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CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	30.
74-83-9	BROMOMETHANE		ND	30.
75-01-4	VINYL CHLORIDE		ND	30.
75-00-3	CHLOROETHANE		ND	30.
75-09-2	METHYLENE CHLORIDE		ND	50.
67-64-1	ACETONE		ND	50.
107-02-8	ACROLEIN		ND	50.
107-13-1	ACRYLONITRILE		ND	50.
75-15-0	CARBON DISULFIDE		ND	5.
75-35-4	1,1-DICHLOROETHENE		18.	5.
75-34-3	1,1-DICHLOROETHANE		ND	5.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	5.
109-99-9	TETRAHYDROFURAN		ND	5.
75-69-4	TRICHLOROFLUOROMETHANE		ND	5.
76-13-1	FREON-TF		ND	5.
106-93-4	ETHYLENE DIBROMIDE		ND	5.
123-91-1	1,4-DIOXANE		ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	5.
67-66-3	CHLOROFORM		ND	5.
107-06-2	1,2-DICHLOROETHANE		ND	5.
78-93-3	2-BUTANONE		ND	5 0.
71-55-6	1,1,1-TRICHLOROETHANE		570.	5.
16-23-5	CARBON TETRACHLORIDE		ND	5.
108-05-4	VINYL ACETATE		ND	30.
75-27-4	BROMODICHLOROMETHANE		ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	5.
78-87-5	1,2-DICHLOROPROPANE		ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	5.
79-01-6	TRICHLOROETHENE		ND .	5.
124-48-1	DIBROMOCHLOROMETHANE		ND	5.
79-00-5	1,1,2-TRICHLOROETHANE		ND	5.
71-43-2	BENZENE		ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	50.
75-25-2	BROMOFORM		ND	5.
119-78-6	2-HEXANONE		ND	30.
108-10-1	4-METHYL-2-PENTANONE		ND	30.
127-18-4	TETRACHLOROETHENE		ND	5.
108-88-3	TOLUENE		56.	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-3-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V1 LEVEL: LOW MATRIX: SOIL DATE PREPARED: 09/01/87 DATE ANALYZED: 09/01/87 STANDARD ID: **VOA397** INSTRUMENT ID: 5101

CAS #	COMPOUND	CONC: UG/KG(PPI	DETECTION B) LIMIT
108-90-7	CHLOROBENZENE	ND	5.
100-41-4	ETHYLBENZENE	11.	5.
100-42-5	STYRENE	ND	5.
95-47-6	TOTAL XYLENES	110.	5.
108-41-8	M-CHLOROTOLUENE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-3-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION

UG/KG(PPB)

1 CHLORINATED HYDROCARBONS

VOA

300.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-4-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V7 LEVEL: MEDIUM MATRIX: SOIL 09/01/87 DATE PREPARED: 09/01/87 DATE ANALYZED: STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G:1ML,200UL:1ML,5

CAS #	COMPOUND	CONC:	UG/G(PPM)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	30.
74-83-9	BROMOMETHANE		ND	30.
75-01-4	VINYL CHLORIDE		ND	30.
75-00-3	CHLOROETHANE		ND	30.
75-09-2	METHYLENE CHLORIDE		ND	50.
67-64-1	ACETONE		ND	50.
107-02-8	ACROLEIN		ND	50.
107-13-1	ACRYLONITRILE		ND	50.
75-15-0	CARBON DISULFIDE		ND	5.
75-35-4	1,1-DICHLOROETHENE		ND	5.
75-34-3	1,1-DICHLOROETHANE		ND	5.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	5.
109-99-9	TETRAHYDROFURAN		ND	5.
75-69-4	TRICHLOROFLUOROMETHANE		ND	5.
76-13-1	FREON-TF		ND	5.
106-93-4	ETHYLENE DIBROMIDE		ND	5.
123-91-1	1,4-DIOXANE		ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	5.
67-66-3	CHLOROFORM		ND	5.
107-06-2	1,2-DICHLOROETHANE		ND	5.
78-93-3	2-BUTANONE		160.	50.
71-55-6	1,1,1-TRICHLOROETHANE		27.	5.
16-23-5	CARBON TETRACHLORIDE		ND	5.
108-05-4	VINYL ACETATE		ND	30.
75-27-4	BROMODICHLOROMETHANE		ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	5.
78-87-5	1,2-DICHLOROPROPANE		ND	5.
10061-02-6	•		ND	5.
79-01-6	TRICHLOROETHENE		10.	5.
124-48-1	DIBROMOCHLOROMETHANE		ND	5.
79-00-5	1,1,2-TRICHLOROETHANE		ND	5.
71-43-2	BENZENE		ND	5.
10061-01-5			ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	50.
75-25-2	BROMOFORM		ND	5.
119-78-6	2-HEXANONE		ND	30.
108-10-1	4-METHYL-2-PENTANONE		ND	30.
127-18-4	TETRACHLOROETHENE		ND	5.
108-88-3	TOLUENE		870.	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-4-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

GCMS FILENAME: 6926V7 DATE RECEIVED: 08/24/87 LEVEL: MEDIUM MATRIX: SOIL DATE PREPARED: 09/01/87 DATE ANALYZED: 09/01/87 INSTRUMENT ID: VOA397 5101 STANDARD ID:

SAMPLE AMOUNT: 1.0G:1ML,200UL:1ML,5

CAS #	COMPOUND	CONC: UG/G(PPM	DETECTION LIMIT
108-90-7	CHLOROBENZENE	ND	5.
100-41-4	ETHYLBENZENE	41.	5.
100-42-5	STYRENE	ND	5.
95-47-6	TOTAL XYLENES	460.	5.
108-41-8	M-CHLOROTOLUENE	ND	5.
95-50-1	1,2-DICHLOROBENZENE	ND	5.
541-73-1	1,3-DICHLOROBENZENE	, ND	5.
106-46-7	1,4-DICHLOROBENZENE	ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-4-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/G (PPM)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-5-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V8
LEVEL: MEDIUM MATRIX: SOIL
DATE PREPARED: 09/01/87 DATE ANALYZED: 09/01/87

STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G:1ML,100UL:1ML,5

CAS #	COMPOUND	CONC:	UG/G(PPM)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	50.
74-83-9	BROMOMETHANE		ND	50.
75-01-4	VINYL CHLORIDE		ND	50.
75-00-3	CHLOROETHANE		ND	50.
75-09-2	METHYLENE CHLORIDE		ND	100.
67-64-1	ACETONE		ND	100.
107-02-8	ACROLEIN		ND	100.
107-13-1	ACRYLONITRILE		ND	100.
75-15-0	CARBON DISULFIDE		ND	10.
75-35-4	1,1-DICHLOROETHENE		ND	10.
75-34-3	1,1-DICHLOROETHANE		ND	10.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	10.
109-99-9	TETRAHYDROFURAN		ND	10.
75-69-4	TRICHLOROFLUOROMETHANE		ND	10.
76-13-1	FREON-TF		ND	10.
106-93-4	ETHYLENE DIBROMIDE		ND	10.
123-91-1	1,4-DIOXANE		ND	10.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	10.
67-66-3	CHLOROFORM		ND	10.
107-06-2	1,2-DICHLOROETHANE		ND	10.
78-93-3	2-BUTANONE		1800.	100.
71-55-6	1,1,1-TRICHLOROETHANE		38.	10.
16-23-5	CARBON TETRACHLORIDE		ND	10.
108-05-4	VINYL ACETATE		ND	50.
75-27-4	BROMODICHLOROMETHANE		ND	10.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	10.
78-87-5	1,2-DICHLOROPROPANE		ND	10.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	10.
79-01-6	TRICHLOROETHENE		94.	10.
124-48-1	DIBROMOCHLOROMETHANE		ND	10.
79-00-5	1,1,2-TRICHLOROETHANE		ND	10.
71-43-2	BENZENE		ND	10.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	10.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	100.
75-25-2	BROMOFORM		ND	10.
119-78-6	2-HEXANONE		ND	50.
108-10-1	4-METHYL-2-PENTANONE		ND	50.
127-18-4	TETRACHLOROETHENE		ND	10.
108-88-3	TOLUENE		6300.	10.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-5-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V8 LEVEL: MEDIUM MATRIX: SOIL

DATE PREPARED: 09/01/87 . DATE ANALYZED: 09/01/87

STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G:1ML,100UL:1ML,5

CAS #	COMPOUND	CONC: UG/G(PPM)	DETECTION LIMIT
108-90-7	CHLOROBENZENE	. ND	10.
100-41-4	ETHYLBENZENE	180.	10.
100-42-5	STYRENE	ND	10.
95-47-6	TOTAL XYLENES	1300.	10.
108-41-8	M-CHLOROTOLUENE	ND	10.
95-50-1	1,2-DICHLOROBENZENE	ND	10.
541-73-1	1,3-DICHLOROBENZENE	ND	10.
106-46-7	1,4-DICHLOROBENZENE	ND	10.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 15TB-5-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION

UG/G(PPM)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-2-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V2 LEVEL: LOW MATRIX: SOIL 09/01/87 09/01/87 DATE PREPARED: DATE ANALYZED: STANDARD ID: **VOA397** INSTRUMENT ID: 5101

CAS #	COMPOUND	conc:	UG/KG(PPB)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	30.
74-83-9	BROMOMETHANE		ND	30.
75-01-4	VINYL CHLORIDE		ND	30.
75-00-3	CHLOROETHANE		ND	30.
75-09-2	METHYLENE CHLORIDE		ND	50.
67-64-1	ACETONE		ND	50.
107-02-8	ACROLEIN		ND	50.
107-13-1	ACRYLONITRILE		ND	50.
75-15-0	CARBON DISULFIDE		ND	5.
75-35-4	1,1-DICHLOROETHENE		ИD	5.
75-34-3	1,1-DICHLOROETHANE		ND	5.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	5.
109-99-9	TETRAHYDROFURAN		ND	5.
75-69-4	TRICHLOROFLUOROMETHANE		ИD	5.
76-13-1	freon-tf		ND	5.
106-93-4	ETHYLENE DIBROMIDE		ND	5.
123-91-1	1,4-DIOXANE		ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	5.
67 - 66-3 .	CHLOROFORM		ND	5.
107-06-2	1,2-DICHLOROETHANE		ND	5.
78-9 3-3	2-BUTANONE		ND	50.
71-55-6	1,1,1-TRICHLOROETHANE		ND	5.
16-23-5	CARBON TETRACHLORIDE		ND	5.
108-05-4	VINYL ACETATE		ND	30.
75-27-4	BROMODICHLOROMETHANE		ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	5.
78-87- 5	1,2-DICHLOROPROPANE		ND	5.
10061-02-6	•		ND	5.
79-01-6	TRICHLOROETHENE		ND	5.
124-48-1	DIBROMOCHLOROMETHANE		ND	5.
79-00-5	1,1,2-TRICHLOROETHANE		ND	. 5.
71-43-2	BENZENE		ND	5.
10061-01-5	CIS-1, 3-DICHLOROPROPENE		ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	50.
75-25-2	BROMOFORM		ND	5.
119-78-6	2-HEXANONE		ND	30.
108-10-1	4-METHYL-2-PENTANONE		ND	30.
127-18-4	TETRACHLOROETHENE		ND	5.
108-88-3	TOLUENE		ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-2-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

08/24/87 GCMS FILENAME: 6926V2 DATE RECEIVED: LEVEL: LOW MATRIX: SOIL DATE PREPARED: DATE ANALYZED: 09/01/87 09/01/87 INSTRUMENT ID: 5101 STANDARD ID: **VOA397**

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
888222222	********************	********	==========	
108-90-7	CHLOROBENZENE		ND	5.
100-41-4	ETHYLBENZENE		ND	5.
100-42-5	STYRENE		ND	5.
95-47-6	TOTAL XYLENES		ND	5.
108-41-8	M-CHLOROTOLUENE		ND	5.
95-50-1	1,2-DICHLOROBENZENE		ND	5.
541-73-1	1,3-DICHLOROBENZENE		ND	5.
106-46-7	1,4-DICHLOROBENZENE		ND	5.

CLIENT: WOODWARD-CLYDE

SITE: **SAMPLE: 17TB-2-3**

DOUGLAS AIRCRAFT

TENTATIVELY IDENTIFIED COMPOUNDS

FRACTION CONCENTRATION COMPOUND NAME

UG/KG(PPB)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-3-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V3 LEVEL: LOW MATRIX: SOIL DATE PREPARED: 09/01/87 DATE ANALYZED: 09/01/87 STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G

				DETECTION
CAS #	COMPOUND	CONC:	UG/KG(PPB)	LIMIT
74-87-3	CHLOROMETHANE		.ND	30.
74-83-9	BROMOMETHANE		ND	30.
75-01-4	VINYL CHLORIDE		ND	30.
75-00-3	CHLOROETHANE		ND	30.
75-09-2	METHYLENE CHLORIDE		ND	50.
67-64-1	ACETONE		ND	50.
107-02-8	ACROLEIN		ND	50.
107-13-1	ACRYLONITRILE		ND	50.
75-15-0	CARBON DISULFIDE		ND	5.
75-35-4	1,1-DICHLOROETHENE		ND	5.
75-34-3	1,1-DICHLOROETHANE		ND	5.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	5.
109-99-9	TETRAHYDROFURAN		ND	5.
75-69-4	TRICHLOROFLUOROMETHANE		ND	5.
76-13-1	FREON-TF		ND	5.
106-93-4	ETHYLENE DIBROMIDE		ND	5.
123-91-1	1,4-DIOXANE		ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	5.
67-66-3	CHLOROFORM		ND	5.
107-06-2	1,2-DICHLOROETHANE		ND	5.
78-93-3	2-BUTANONE		ND	50.
71-55-6	1,1,1-TRICHLOROETHANE		36.	5.
16-23-5	CARBON TETRACHLORIDE		ND	5.
108-05-4	VINYL ACETATE		ND	30.
75-27-4	BROMODICHLOROMETHANE		ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	5.
78-87-5	1,2-DICHLOROPROPANE		ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	5.
79-01-6	TRICHLOROETHENE		ND	5.
124-48-1	DIBROMOCHLOROMETHANE		ND	5.
79-00-5	1,1,2-TRICHLOROETHANE		ND	5.
71-43-2	BENZENE		ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	5.
110-75-8	2-CHLOROETHYLVINYL ETHER		ND	50.
75-25-2	BROMOFORM		ND	5.
119-78-6	2-HEXANONE		ND	30.
108-10-1	4-METHYL-2-PENTANONE		ND	30.
127-18-4	TETRACHLOROETHENE		ND	5.
108-88-3	TOLUENE		8.	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-3-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V3 LOW LEVEL: MATRIX: SOIL 09/01/87 DATE PREPARED: DATE ANALYZED: 09/01/87 STANDARD ID: **VOA397** INSTRUMENT ID: 5101

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	5.
100-41-4	ETHYLBENZENE	•	ND	5.
100-42-5	STYRENE		ND	5.
95-47-6	TOTAL XYLENES		ND	5.
108-41-8	M-CHLOROTOLUENE		ND	5.
95-50-1	1,2-DICHLOROBENZENE		ND	5.
541-73-1	1,3-DICHLOROBENZENE		ND	5.
106-46-7	1.4-DICHLOROBENZENE		ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-3-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/KG(PPB)

1 NONE FOUND VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-5-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: GCMS FILENAME: 08/24/87 6926V4 LEVEL: LOW MATRIX: SOIL DATE PREPARED: 09/01/87 DATE ANALYZED: 09/01/87 VOA397 INSTRUMENT ID: STANDARD ID: 5101

CAS #	COMPOUND	UG/KG(PPB)	DETECTION LIMIT
74-87-3	CHLOROMETHANE	 ND	30.
74-83-9	BROMOMETHANE	ND	30.
75-01-4	VINYL CHLORIDE	ND	3 0.
75-00-3	CHLOROETHANE	מא	30.
75-09-2	METHYLENE CHLORIDE	ND	50.
67-64-1	ACETONE	ND	50.
107-02-8	ACROLEIN	ND	50.
107-13-1	ACRYLONITRILE	ND	50.
75-15-0	CARBON DISULFIDE	ND	5.
75-35-4	1,1-DICHLOROETHENE	ND	5.
75-34-3	1,1-DICHLOROETHANE	ND	5.
156-60-5	TRANS-1,2-DICHLOROETHENE	ND	5.
109-99-9	TETRAHYDROFURAN	ND	5.
75-69-4	TRICHLOROFLUOROMETHANE	ND	5.
76-13-1	FREON-TF	ИD	5.
106-93-4	ETHYLENE DIBROMIDE	ND	5.
123-91-1	1,4-DIOXANE	14.	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	ND	5.
67-66-3	CHLOROFORM	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
78-93-3	2-BUTANONE	ND	50.
71-55-6	1,1,1-TRICHLOROETHANE	13.	5.
16-23-5	CARBON TETRACHLORIDE	ND	5.
108-05-4	VINYL ACETATE	ND	30.
75-27-4	BROMODICHLOROMETHANE	ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	5.
78-87-5	1,2-DICHLOROPROPANE	ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	иD	5.
79-01-6	TRICHLOROETHENE	ND	5.
124-48-1	DIBROMOCHLOROMETHANE	иD	5.
79-00-5	1,1,2-TRICHLOROETHANE	ND	5.
71-43-2	BENZENE	ИD	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	иD	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	ND	5 0.
75-25-2	BROMOFORM	ИD	5.
119-78-6	2-HEXANONE	ИD	30.
108-10-1	4-METHYL-2-PENTANONE	ND	30.
127-18-4	TETRACHLOROETHENE	ND	5.
108-88-3	TOLUENE	7.	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-7-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: GCMS FILENAME: 08/24/87 6926V11 LEVEL: MEDIUM MATRIX: SOIL DATE PREPARED: 09/01/87 09/01/87 DATE ANALYZED: STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G:1ML, 200UL:1ML, 5

CAS #	COMPOUND	CONC: UG/G(PPM)	DETECTION LIMIT
74-87-3	CHLOROMETHANE	ND .	30.
74-83-9	BROMOMETHANE	ND	30.
75-01-4	VINYL CHLORIDE	ND	30.
75-00-3	CHLOROETHANE	ND	30.
75-09-2	METHYLENE CHLORIDE	ND	50.
67-64-1	ACETONE	ND	50.
107-02-8	ACROLEIN	ND	50.
107-13-1	ACRYLONITRILE	ND	5 0.
75-15-0	CARBON DISULFIDE	ND	
75-35-4	1,1-DICHLOROETHENE	ND	
75-34-3	1,1-DICHLOROETHANE	ND	
156-60-5	TRANS-1,2-DICHLOROETHENE	ND	
109-99-9	TETRAHYDROFURAN	ND	5.
75-69-4	TRICHLOROFLUOROMETHANE	ND	
76-13-1	FREON-TF	ND	
106-93-4	ETHYLENE DIBROMIDE	ND	
123-91-1	1,4-DIOXANE	ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	ND	5.
67-66-3	CHLOROFORM	ND	5.
107-06-2	1,2-DICHLOROETHANE	ND	5.
78-93-3	2-BUTANONE	810.	50.
71-55-6	1,1,1-TRICHLOROETHANE	NE	5.
16-23-5	CARBON TETRACHLORIDE	NE	5.
108-05-4	VINYL ACETATE	NI	30.
75-27-4	BROMODICHLOROMETHANE	NI	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE	NI	5.
78-87-5	1,2-DICHLOROPROPANE	NI	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE	NI	5.
79-01-6	TRICHLOROETHENE	NI	5.
124-48-1	DIBROMOCHLOROMETHANE	NI	5.
79-00-5	1,1,2-TRICHLOROETHANE	NI	5.
71-43-2	BENZENE	NI	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE	NI	5.
110-75-8	2-CHLOROETHYLVINYL ETHER	NI	50.
75-25-2	BROMOFORM	NI	5,
119-78-6	2-HEXANONE	N1	30.
108-10-1	4-METHYL-2-PENTANONE	840.	30.
127-18-4	TETRACHLOROETHENE	N	D 5.
108-88-3	TOLUENE	N	D 5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-7-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 08/24/87 GCMS FILENAME: 6926V11 LEVEL: MEDIUM SOIL MATRIX: 09/01/87 DATE PREPARED: 09/01/87 DATE ANALYZED: STANDARD ID: VOA397 INSTRUMENT ID: 5101

SAMPLE AMOUNT: 1.0G:1ML,200UL:1ML,5

CAS #	COMPOUND	CONC:	UG/G(PPM)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	5.
100-41-4	ETHYLBENZENE		ND	5.
100-42-5	STYRENE		ND	5.
95-47-6	TOTAL XYLENES		ND	5.
108-41-8	M-CHLOROTOLUENE		ND	5.
95-50-1	1,2-DICHLOROBENZENE		ND	5.
541-73-1	1,3-DICHLOROBENZENE		ND	5.
106-46-7	1,4-DICHLOROBENZENE		ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-7-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/G(PPM)

1 NONE FOUND

VOA

Data Reporting Qualifiers

- Value If the result is a value greater than or equal to the Detection Limit (DL), the value is reported.
- ND Indicates that the compound was analyzed for but not detected. The minimum DL for the sample with the ND is reported based on necessary concentration or dilution actions.
- TR Indicates an estimated value. This flag is used when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified DL but greater than zero.



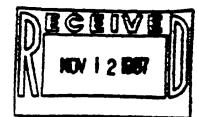
Woodward-Clyde Consultants SHIPMENT NO.: 3

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and the opening

LA-OF-0183-421

November 10, 1987



WOODWARD-CLYDE 203 N. Golden Circle Drive Santa Ana, CA 92705

Attn: Allistair Callendar

JOB NO. 7592



ANALYTICAL CHEMIE

LABORATORY REPORT

Samples Received: Twenty-five (25) soil & four (4) water samples

Date Received: 10-29-87

Released for Analysis: 11-4-87

Purchase Order No: Proj: 8741863D-1000/Douglas Aircraft

The samples were analyzed as follows:

Samples Analyzed

Analysis

Results

MW-3-2-3 & MW-3-3-3

Volatile Organics

by EPA 8240

Data Sheets

Page 1 of 1

Michael Shelton

Senior Chemist

D.J. Northington, Ph.D. Technical Director

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 213/948-2225

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3-2-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

GCMS FILENAME: 7592V1 DATE RECEIVED: 10/29/87 SOIL LOW MATRIX: LEVEL: 11/10/87 DATE PREPARED: DATE ANALYZED: 11/10/87 5100 **VOA607** INSTRUMENT ID: STANDARD ID:

SAMPLE AMOUNT: 1.0G

. . . .

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
*********	*****************		********	=======================================
74-87-3	CHLOROMETHANE		ND	30.
74-83-9	BROMOMETHANE		ND	30.
75-01-4	VINYL CHLORIDE		ND	30.
75-00-3	CHLOROETHANE		ND	30.
75-09-2	METHYLENE CHLORIDE		ND	50.
67-64-1	ACETONE		ND	50.
107-02-8	ACROLEIN		ND	50.
107-13-1	ACRYLONITRILE	•	ND	50.
75-15-0	CARBON DISULFIDE		ND	5.
75-35-4	1,1-DICHLOROETHENE		53.	5.
75-34-3	1,1-DICHLOROETHANE		98.	5.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	5.
109-99-9	TETRAHYDROFURAN		ND	5.
75-69-4	TRICHLOROFLUOROMETHANE		ND	5.
76-13-1	FREON-TF		ИD	5.
106-93-4	ETHYLENE DIBROMIDE		ND	5.
123-91-1	1,4-DIOXANE		ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	5.
67-66-3	CHLOROFORM		ND	5.
107-06-2	1,2-DICHLOROETHANE		ND	5.
78-93-3	2-BUTANONE		ND	50.
71-55-6	1,1,1-TRICHLOROETHANE		70.	5.
16-23-5	CARBON TETRACHLORIDE		ND	5.
108-05-4	VINYL ACETATE		ND	30.
75-27-4	BROMODICHLOROMETHANE		ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE		ND	5.
78-87- 5	1,2-DICHLOROPROPANE		ND	5.
10061-02-6	TRANS-1,3-DICHLOROPROPENE		ND	5.
79-01-6	TRICHLOROETHENE		ND	5.
124-48-1	CHLORODIBROMOMETHANE		ND	5.
79-00- 5	1,1,2-TRICHLOROETHANE		ИD	5.
71-43-2	BENZENE		ND	, 5 .
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	5.
110-75-8	2-CHLOROETHYLVINYLETHER		ND	50.
75-25-2	BROMOFORM		ND	5.
119-78-6	2-HEXANONE		ND	3 0.
108-10-1	4-METHYL-2-PENTANONE		ИD	30.
127-18-4	TETRACHLOROETHENE		ND	5.
108-88-3	TOLUENE		590.	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3-2-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

10/29/87 DATE RECEIVED: GCMS FILENAME: 7592V1 LEVEL: LOW MATRIX: SOIL DATE PREPARED: 11/10/87 11/10/87 DATE ANALYZED: STANDARD ID: VOA607 INSTRUMENT ID: 5100

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	5.
100-41-4	ETHYLBENZENE		ND	5.
100-42-5	STYRENE		ND	5.
95-47-6	TOTAL XYLENES		ND	5.
108-41-8	M-CHLOROTOLUENE		ND	5.
541-73-1	1,3-DICHLOROBENZENE		ND	5.
106-46-7	1,4-DICHLOROBENZENE		ND	5.
95-50-1	1,2-DICHLOROBENZENE		ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3-2-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME

FRACTION CONCENTRATION

UG/KG(PPB)

1 NONE FOUND

VOA

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3-3-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 10/29/87 GCMS FILENAME: 7592V2 LOW LEVEL: MATRIX: SOIL DATE PREPARED: 11/10/87 11/10/87 DATE ANALYZED: VOA607 5100 STANDARD ID: INSTRUMENT ID:

SAMPLE AMOUNT: 1.0G

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
74-87-3	CHLOROMETHANE		ND	30.
74-83-9	BROMOMETHANE		ND	30.
75-01-4	VINYL CHLORIDE		ND	30.
75-00-3	CHLOROETHANE		ND	30.
75-09-2	METHYLENE CHLORIDE		ND	50.
67-64-1	ACETONE		ND	50.
107-02-8	ACROLEIN		ND	50.
107-13-1	ACRYLONITRILE		ND	50.
75-15-0	CARBON DISULFIDE		ND	5.
75-35-4	1,1-DICHLOROETHENE		ND	5.
75-34-3	1,1-DICHLOROETHANE		ND	5.
156-60-5	TRANS-1,2-DICHLOROETHENE		ND	5.
109-99-9	TETRAHYDROFURAN		ND	5.
75-69-4	TRICHLOROFLUOROMETHANE		ND	5.
76-13-1	FREON-TF		ND	5.
106-93-4	ETHYLENE DIBROMIDE		ND	5.
123-91-1	1,4-DIOXANE		ND	5.
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		ND	5.
67-66-3	CHLOROFORM		ND	5.
107-06-2	1,2-DICHLOROETHANE		ИD	5.
78-93-3	2-BUTANONE		ИD	50.
71-55-6	1,1,1-TRICHLOROETHANE		ND	5.
16-23-5	CARBON TETRACHLORIDE		ND	5.
108-05-4	VINYL ACETATE		ND	30.
75-27-4	BROMODICHLOROMETHANE		ND	5.
79-34-5	1,1,2,2-TETRACHLOROETHANE		מא	5.
78-87-5	1,2-DICHLOROPROPANE		מא	5.
10061-02-6	TRANS-1, 3-DICHLOROPROPENE		ND	5.
79-01-6	TRICHLOROETHENE		ND	5,
124-48-1	CHLORODIBROMOMETHANE		ND	5,
79-00-5	1,1,2-TRICHLOROETHANE		ND	5.
71-43-2	BENZENE		ND	5.
10061-01-5	CIS-1,3-DICHLOROPROPENE		ND	_5.
110-75-8	2-CHLOROETHYLVINYLETHER		ND	50.
75-25-2	BROMOFORM		ND	5.
119-78-6	2-HEXANONE		ND	30.
108-10-1	4-METHYL-2-PENTANONE		310.	30.
127-18-4	TETRACHLOROETHENE	•	ND	5.
108-88-3	TOLUENE		8.	5.

100 B

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: MW-3-3-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED: 10/29/87 GCMS FILENAME: 7592V2 LEVEL: LOW MATRIX: SOIL DATE PREPARED: 11/10/87 DATE ANALYZED: 11/10/87 STANDARD ID: **VOA607** INSTRUMENT ID: 5100

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
108-90-7	CHLOROBENZENE		ND	. 5.
100-41-4	ETHYLBENZENE		ND	5.
100-42-5	STYRENE		ND	5.
95-47-6	TOTAL XYLENES		ND	5.
108-41-8	M-CHLOROTOLUENE		ND	5.
541-73-1	1,3-DICHLOROBENZENE		ND	5.
106-46-7	1,4-DICHLOROBENZENE		ИD	5.
95-50-1	1,2-DICHLOROBENZENE	•	ND	5.

CLIENT:

WOODWARD-CLYDE

SITE:

DOUGLAS AIRCRAFT

SAMPLE: 17TB-5-3

ANALYSIS TYPE: EPA METHOD 8240 (624)

ORGANICS ANALYSIS DATA RESULTS

DATE RECEIVED:

08/24/87

GCMS FILENAME:

6926V4

LEVEL:

LOW

MATRIX:

SOIL

DATE PREPARED:

09/01/87

1,4-DICHLOROBENZENE

DATE ANALYZED:

09/01/87

ND

5.

STANDARD ID:

106-46-7

VOA397

SAMPLE AMOUNT:

1.0G

INSTRUMENT ID:

5101

CAS #	COMPOUND	CONC:	UG/KG(PPB)	DETECTION LIMIT
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108-90-7	CHLOROBENZENE		ND	5.
100-41-4	ETHYLBENZENE		ND	5.
100-42-5	STYRENE		ND	5.
95-47-6	TOTAL XYLENES		ИD	5.
108-41-8	M-CHLOROTOLUENE		ND	5.
95-50-1	1,2-DICHLOROBENZENE		ИD	5.
541-73-1	1,3-DICHLOROBENZENE		ND	5.

CLIENT: WOODWARD-CLYDE SITE: DOUGLAS AIRCRAFT

SAMPLE: 17TB-5-3

TENTATIVELY IDENTIFIED COMPOUNDS

COMPOUND NAME FRACTION CONCENTRATION UG/KG(PPB)

1 1,3-DIOXOLANE VOA 600.